0.1. No.1.

(1) Mennyi $\int \frac{2x+2}{1+4x^2}\,dx$?

     A) $\frac{1}{4}\log(-2(2x+1)) - \frac{3}{4}\log(2(2x-1))$

     B) $\log(-8(2x+1)) - 3\log(8(2x-1))$

     C) $\frac{1}{4}\log\left(4x^2+1\right) - \tan^{-1}(2x)$

     D) $\frac{1}{4}\log\left(4x^2+1\right) + \tan^{-1}(2x)$

     E) $\log\left(4x^2+1\right) + 4\tan^{-1}(2x)$

(2) Mennyi $\int x^2 \sin(3x^3)\,dx$?

     A) $-\frac{1}{3}\cos\left(x^3\right)$

     B) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x)$

     C) $-\frac{1}{9}\cos\left(3x^3\right)$

     D) $-\frac{1}{6}\cos\left(3x^2\right)$

     E) 13.2

(3) $y' = 3x^2 + 5x + 4$, $y(2) = 2$. Mennyi $y(10)$?

     A) 1262, B) 1257, C) 1259, D) 1266, E) 1256

(4) Mennyi $\int \frac{5}{4^2+5^2x} + \sin(2x) + e^{-2x}\,dx$?

     A) $-\frac{e^{-2x}}{2} - \frac{1}{2}\cos(2x) + \frac{1}{4}\tan^{-1}\left(\frac{5x}{4}\right)$

     B) $-\frac{e^{-2x}}{2} + \frac{1}{2}\cos(2x) + \frac{1}{4}\tan^{-1}\left(\frac{5x}{4}\right)$

     C) $-\frac{e^{-2x}}{2} - \frac{1}{2}\cos(2x) + \frac{1}{5}\tan^{-1}\left(\frac{5x}{4}\right)$

     D) $-\frac{e^{-2x}}{2} - \frac{1}{2}\sin(2x) + \frac{5}{4}\tan^{-1}\left(\frac{5x}{4}\right)$

     E) $-e^{-2x} - \frac{1}{2}\cos(2x) + \frac{1}{4}\tan^{-1}\left(\frac{5x}{4}\right)$

(5) Keresd meg az $f(x) = x^2 - 13x + 36$ es az $g(x) = 1x + 1$ fuggvenyek altal bezart teruletet!

     A) $\frac{2}{3}$, B) $\frac{1}{3}$, C) $\frac{4}{3}$, D) $\frac{8}{3}$, E) $\frac{10}{3}$

(6) Mennyi $\int_{-3}^{6} f(x)\,dx$, ha $f(x) = \begin{cases} 3+3x & \text{if } x < 0 \\ 1 & \text{if } x > 0. \end{cases}$?

     A) 71, B) 74, C) 75, D) 72, E) 70

(7) Mennyi $\int_{-3}^{4} f(x)\,dx$, ha $f(x) = \begin{cases} 1 & \text{if } x < 0 \\ 2+1x & \text{if } x > 0. \end{cases}$?

     A) 17, B) 20, C) 14, D) 19, E) 15

(8) Mennyi $\int (2+3x)\sin(5x)\,dx$?

     A) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \frac{2}{5}\cos(5x)$

     B) $\frac{3}{25}\sin(5x) - \frac{3}{5}x\cos(5x) - \frac{2}{5}\cos(5x)$

     C) $\frac{3}{125}\sin(5x) - \frac{3}{25}x\cos(5x) - \frac{2}{25}\cos(5x)$

     D) $-\frac{3}{25}\sin(5x) + \frac{3}{5}x\cos(5x) - \frac{2}{5}\cos(5x)$

     E) $\frac{3}{5}x\sin(5x) - \frac{7}{25}\cos(5x)$

(9) Mennyi $\int x^4 \cos(4x^5)\,dx$?

     A) $\frac{1}{16}x\sin(4x) + \frac{1}{64}\cos(4x)$, B) $\frac{1}{20}\sin\left(4x^5\right)$, C) $\frac{1}{16}\sin\left(4x^4\right)$, D) $\frac{1}{4}x\sin(4x) + \frac{1}{16}\cos(4x)$, E) $\frac{4\sin\left(x^5\right)}{5}$

(10) Mennyi $\int \frac{1}{x^4} + \frac{1}{2x^5} + \sqrt[5]{(4x)^3}\,dx$?

     A) $\frac{5x^{8/5}}{2\,2^{4/5}} - \frac{1}{64x^4} - \frac{1}{3x^3}$, B) $\frac{5x^{8/5}}{2\,2^{4/5}} + \frac{1}{128x^4} + \frac{1}{3x^3}$, C) $\frac{5x^{8/5}}{2\,2^{4/5}} - \frac{1}{128x^4} - \frac{1}{5x^3}$, D) $5\sqrt[5]{2}x^{8/5} - \frac{1}{128x^4} - \frac{1}{3x^3}$, E) $\frac{5x^{8/5}}{2\,2^{4/5}} - \frac{1}{8x^4} - \frac{1}{3x^3}$

(11) Mennyi $\int x^2 \log(3x)\,dx$?

     A) $\frac{1}{4}x^4\log(3x) - \frac{x^4}{16}$, B) $\frac{1}{2}x^2\log(3x) - \frac{x^2}{4}$, C) $x^3\log(3x) - \frac{x^3}{3}$, D) $\frac{1}{3}x^3\log(3x) - \frac{x^3}{9}$, E) $\frac{1}{3}x^3\log(x) - \frac{x^3}{9}$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.2. **No.2.**

(1) Mennyi $\int x^2 \log(3x)\,dx$?

   A) $x^3 \log(3x) - \frac{x^3}{3}$, B) $\frac{1}{3}x^3 \log(3x) - \frac{x^3}{9}$, C) $\frac{1}{2}x^2 \log(3x) - \frac{x^2}{4}$, D) $\frac{1}{4}x^4 \log(3x) - \frac{x^4}{16}$, E) $\frac{1}{3}x^3 \log(x) - \frac{x^3}{9}$

(2) Mennyi $\int \frac{3}{4^2+4^2x} + \sin(4x) + e^{-3x}\,dx$?

   A) 13.2
   B) $-\frac{e^{-3x}}{3} - \frac{1}{4}\cos(4x) + \frac{3}{16}\tan^{-1}(x)$
   C) $-\frac{e^{-3x}}{3} - \frac{1}{4}\sin(4x) + \frac{3}{4}\tan^{-1}(x)$
   D) $-\frac{e^{-3x}}{3} + \frac{1}{4}\cos(4x) + \frac{3}{16}\tan^{-1}(x)$
   E) $-e^{-3x} - \frac{1}{4}\cos(4x) + \frac{3}{16}\tan^{-1}(x)$

(3) Mennyi $\int x^2 \sin(2x^3)\,dx$?

   A) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x)$
   B) 13.2
   C) $-\frac{1}{4}\cos\left(2x^2\right)$
   D) $-\frac{1}{3}\cos\left(x^3\right)$
   E) $-\frac{1}{6}\cos\left(2x^3\right)$

(4) Mennyi $\int \frac{3x+3}{1+4x^2}\,dx$?

   A) $\frac{3}{8}\log\left(4x^2+1\right) - \frac{3}{2}\tan^{-1}(2x)$
   B) $\frac{3}{2}\log\left(4x^2+1\right) + 6\tan^{-1}(2x)$
   C) $\frac{3}{8}\log(-3(2x+1)) - \frac{9}{8}\log(3(2x-1))$
   D) $\frac{3}{8}\log\left(4x^2+1\right) + \frac{3}{2}\tan^{-1}(2x)$
   E) $\frac{3}{2}\log(2x+1) - \frac{9}{2}\log(1-2x)$

(5) Mennyi $\int(3+3x)\sin(2x)\,dx$?

   A) $\frac{3}{4}\sin(2x) - \frac{3}{2}x\cos(2x) - \frac{3}{2}\cos(2x)$
   B) $-\frac{3}{4}\sin(2x) + \frac{3}{2}x\cos(2x) - \frac{3}{2}\cos(2x)$
   C) $\frac{3}{2}x\sin(2x) - \frac{3}{4}\cos(2x)$
   D) $\frac{3}{8}\sin(2x) - \frac{3}{2}\cos^2(x) - \frac{3}{4}x\cos(2x)$
   E) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x) - \frac{3}{2}\cos(2x)$

(6) $y' = 5x^2 + 1x + 2$, $y(5) = 4$. Mennyi $y(10)$?

   A) $\frac{9059}{6}$, B) $\frac{9041}{6}$, C) $\frac{8999}{6}$, D) $\frac{9005}{6}$, E) $\frac{9029}{6}$

(7) Mennyi $\int \frac{1}{x^3} + \frac{1}{3x^2} + \sqrt[3]{(3x)^3}\,dx$?

   A) $\frac{3x^2}{2} - \frac{1}{2x^2} - \frac{1}{3x}$, B) $\frac{9x^2}{2} - \frac{1}{2x^2} - \frac{1}{9x}$, C) 13.2, D) $\frac{3x^2}{2} + \frac{1}{2x^2} + \frac{1}{9x}$, E) $\frac{3x^2}{2} - \frac{1}{4x^2} - \frac{1}{9x}$

(8) Mennyi $\int_{-3}^{2} f(x)\,dx$, ha $f(x) = \begin{cases} 5 & \text{if } x < 0 \\ 3+5x & \text{if } x > 0. \end{cases}$?

   A) 31, B) 28, C) 26, D) 27, E) 30

(9) Mennyi $\int_{-4}^{4} f(x)\,dx$, ha $f(x) = \begin{cases} 4+2x & \text{if } x < 0 \\ 5 & \text{if } x > 0. \end{cases}$?

   A) 48, B) 52, C) 49, D) 47, E) 50

(10) Mennyi $\int x^2 \cos(5x^3)\,dx$?

   A) $\frac{1}{10}\sin\left(5x^2\right)$, B) $\frac{2\sin\left(x^3\right)}{3}$, C) $\frac{1}{15}\sin\left(5x^3\right)$, D) $\frac{1}{10}x\sin(5x) + \frac{1}{50}\cos(5x)$, E) $\frac{1}{5}x\sin(5x) + \frac{1}{25}\cos(5x)$

(11) Keresd meg az $f(x) = x^2 - 11x + 24$ es az $g(x) = 1x + 3$ fuggvenyek altal bezart teruletet!

   A) $\frac{23}{3}$, B) $\frac{2}{3}$, C) $\frac{11}{3}$, D) $\frac{32}{3}$, E) $\frac{26}{3}$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.3. **No.3.**

(1) Mennyi $\int x^2 \cos(4x^3)\, dx$?

A) $\frac{2\sin(x^3)}{3}$, B) $\frac{1}{12}\sin(4x^3)$, C) $\frac{1}{4}x\sin(4x) + \frac{1}{16}\cos(4x)$, D) $\frac{1}{8}x\sin(4x) + \frac{1}{32}\cos(4x)$, E) $\frac{1}{8}\sin(4x^2)$

(2) Mennyi $\int (5+4x)\sin(4x)\, dx$?

A) $x\sin(4x) - \cos(4x)$
B) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x) - \frac{5}{4}\cos(4x)$
C) $\frac{1}{4}\sin(4x) - x\cos(4x) - \frac{5}{4}\cos(4x)$
D) $-\frac{1}{4}\sin(4x) + x\cos(4x) - \frac{5}{4}\cos(4x)$
E) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x) - \frac{5}{16}\cos(4x)$

(3) Mennyi $\int x^2 \sin(5x^3)\, dx$?

A) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x)$
B) 13.2
C) $-\frac{1}{10}\cos(5x^2)$
D) $-\frac{1}{15}\cos(5x^3)$
E) $-\frac{1}{3}\cos(x^3)$

(4) Mennyi $\int_{-1}^{2} f(x)\, dx$, ha $f(x) = \begin{cases} 4 & \text{if } x < 0 \\ 4 + 2x & \text{if } x > 0. \end{cases}$?

A) 13, B) 11, C) 14, D) 12, E) 16

(5) $y' = 4x^2 + 2x + 1$, $y(2) = 3$. Mennyi $y(10)$?

A) $\frac{4268}{3}$, B) $\frac{4262}{3}$, C) $\frac{4289}{3}$, D) $\frac{4274}{3}$, E) $\frac{4277}{3}$

(6) Mennyi $\int \frac{4x+2}{1+9x^2}\, dx$?

A) $\log(-2(3x+1)) - 5\log(2(3x-1))$
B) $\frac{1}{9}\log(-2(3x+1)) - \frac{5}{9}\log(2(3x-1))$
C) $\frac{2}{9}\log(9x^2+1) - \frac{2}{3}\tan^{-1}(3x)$
D) $\frac{2}{9}\log(9x^2+1) + \frac{2}{3}\tan^{-1}(3x)$
E) $2\log(9x^2+1) + 6\tan^{-1}(3x)$

(7) Mennyi $\int_{-3}^{2} f(x)\, dx$, ha $f(x) = \begin{cases} 5 + 4x & \text{if } x < 0 \\ 1 & \text{if } x > 0. \end{cases}$?

A) 16, B) 18, C) 22, D) 21, E) 17

(8) Keresd meg az $f(x) = x^2 - 17x + 37$ es az $g(x) = 5x + 5$ fuggvenyek altal bezart teruletet!

A) $\frac{20}{3}$, B) $\frac{2}{3}$, C) $\frac{32}{3}$, D) $\frac{17}{3}$, E) $\frac{11}{3}$

(9) Mennyi $\int x^5 \log(4x)\, dx$?

A) $\frac{2}{3}x^6\log(4x) - \frac{x^6}{9}$, B) $\frac{1}{7}x^7\log(4x) - \frac{x^7}{49}$, C) $\frac{1}{5}x^5\log(4x) - \frac{x^5}{25}$, D) $\frac{1}{6}x^6\log(4x) - \frac{x^6}{36}$, E) $\frac{1}{6}x^6\log(x) - \frac{x^6}{36}$

(10) Mennyi $\int \frac{1}{x^4} + \frac{1}{2x^2} + \sqrt[4]{(4x)^2}\, dx$?

A) 13.2, B) $\frac{4x^{3/2}}{3} + \frac{1}{3x^3} + \frac{1}{4x}$, C) $\frac{4x^{3/2}}{3} - \frac{1}{5x^3} - \frac{1}{4x}$, D) $\frac{4x^{3/2}}{3} - \frac{1}{3x^3} - \frac{1}{2x}$, E) $\frac{16x^{3/2}}{3} - \frac{1}{3x^3} - \frac{1}{4x}$

(11) Mennyi $\int \frac{3}{4^2 + 4^2 x} + \sin(5x) + e^{-5x}\, dx$?

A) $-\frac{e^{-5x}}{5} + \frac{1}{5}\cos(5x) + \frac{3}{16}\tan^{-1}(x)$
B) $-\frac{e^{-5x}}{5} - \frac{1}{5}\sin(5x) + \frac{3}{4}\tan^{-1}(x)$
C) 13.2
D) $-\frac{e^{-5x}}{5} - \frac{1}{5}\cos(5x) + \frac{3}{16}\tan^{-1}(x)$
E) $-e^{-5x} - \frac{1}{5}\cos(5x) + \frac{3}{16}\tan^{-1}(x)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.4. **No.4.**

(1) Keresd meg az $f(x) = x^2 - 18x + 47$ es az $g(x) = 4x + 2$ fuggvenyek altal bezart teruletet!

A) $\frac{17}{3}$, B) $\frac{2}{3}$, C) $\frac{8}{3}$, D) $\frac{11}{3}$, E) $\frac{32}{3}$

(2) Mennyi $\int x^4 \sin(3x^5)\,dx$?

A) $-\frac{1}{5}\cos\left(x^5\right)$
B) $-\frac{1}{15}\cos\left(3x^5\right)$
C) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x)$
D) 13.2
E) $-\frac{1}{12}\cos\left(3x^4\right)$

(3) Mennyi $\int \frac{1}{x^4} + \frac{1}{4x^3} + \sqrt[5]{(3x)^2}\,dx$?

A) $\frac{5}{7}3^{2/5}x^{7/5} + \frac{1}{3x^3} + \frac{1}{128x^2}$, B) $\frac{5}{7}3^{2/5}x^{7/5} - \frac{1}{5x^3} - \frac{1}{128x^2}$, C) $\frac{5}{7}3^{2/5}x^{7/5} - \frac{1}{3x^3} - \frac{1}{32x^2}$, D) $\frac{15}{7}3^{2/5}x^{7/5} - \frac{1}{3x^3} - \frac{1}{128x^2}$, E) $\frac{5}{7}3^{2/5}x^{7/5} - \frac{1}{3x^3} - \frac{1}{8x^2}$

(4) Mennyi $\int \frac{5x+2}{1+9x^2}\,dx$?

A) $\frac{5}{2}\log\left(9x^2 + 1\right) + 6\tan^{-1}(3x)$
B) $\frac{5}{18}\log\left(9x^2 + 1\right) + \frac{2}{3}\tan^{-1}(3x)$
C) $\frac{1}{2}\log(-2(3x+1)) - \frac{11}{2}\log(2(3x-1))$
D) $\frac{5}{18}\log\left(9x^2 + 1\right) - \frac{2}{3}\tan^{-1}(3x)$
E) $\frac{1}{18}\log(-2(3x+1)) - \frac{11}{18}\log(2(3x-1))$

(5) $y' = 3x^2 + 3x + 5$, $y(2) = 2$. Mennyi $y(10)$?

A) 1171, B) 1170, C) 1169, D) 1178, E) 1168

(6) Mennyi $\int x^2 \log(4x)\,dx$?

A) $\frac{1}{4}x^4\log(4x) - \frac{x^4}{16}$, B) $\frac{1}{2}x^2\log(4x) - \frac{x^2}{4}$, C) $\frac{1}{3}x^3\log(x) - \frac{x^3}{9}$, D) $\frac{1}{3}x^3\log(4x) - \frac{x^3}{9}$, E) $\frac{4}{3}x^3\log(4x) - \frac{4x^3}{9}$

(7) Mennyi $\int_{-4}^{-3} f(x)\,dx$, ha $f(x) = \begin{cases} 4 + 2x & \text{if } x < 0 \\ 2 & \text{if } x > 0. \end{cases}$?

A) -3, B) -1, C) 2, D) 0, E) -2

(8) Mennyi $\int x^4 \cos(5x^5)\,dx$?

A) $\frac{1}{20}\sin\left(5x^4\right)$, B) $\frac{4\sin\left(x^5\right)}{5}$, C) $\frac{1}{25}\sin\left(5x^5\right)$, D) $\frac{1}{5}x\sin(5x) + \frac{1}{25}\cos(5x)$, E) $\frac{1}{20}x\sin(5x) + \frac{1}{100}\cos(5x)$

(9) Mennyi $\int (2 + 3x)\sin(3x)\,dx$?

A) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x) - \frac{2}{3}\cos(3x)$
B) $\frac{1}{3}\sin(3x) - x\cos(3x) - \frac{2}{3}\cos(3x)$
C) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x) - \frac{2}{9}\cos(3x)$
D) $x\sin(3x) - \frac{1}{3}\cos(3x)$
E) $-\frac{1}{3}\sin(3x) + x\cos(3x) - \frac{2}{3}\cos(3x)$

(10) Mennyi $\int_{-1}^{0} f(x)\,dx$, ha $f(x) = \begin{cases} 1 & \text{if } x < 0 \\ 1 + 4x & \text{if } x > 0. \end{cases}$?

A) 1, B) 0, C) -2, D) -3, E) -1

(11) Mennyi $\int \frac{4}{4^2 + 3^2 x} + \sin(2x) + e^{-4x}\,dx$?

A) $-\frac{e^{-4x}}{4} - \frac{1}{2}\cos(2x) + \frac{1}{3}\tan^{-1}\left(\frac{3x}{4}\right)$
B) $-\frac{e^{-4x}}{4} + \frac{1}{2}\cos(2x) + \frac{1}{3}\tan^{-1}\left(\frac{3x}{4}\right)$
C) $-\frac{e^{-4x}}{4} - \frac{1}{2}\cos(2x) + \frac{4}{9}\tan^{-1}\left(\frac{3x}{4}\right)$
D) $-e^{-4x} - \frac{1}{2}\cos(2x) + \frac{1}{3}\tan^{-1}\left(\frac{3x}{4}\right)$
E) $-\frac{e^{-4x}}{4} - \frac{1}{2}\sin(2x) + \tan^{-1}\left(\frac{3x}{4}\right)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.5. **No.5.**

(1) Mennyi $\int x^5 \cos(4x^6)\, dx$?

   A) $\frac{1}{20} \sin\left(4x^5\right)$, B) $\frac{1}{4}x \sin(4x) + \frac{1}{16} \cos(4x)$, C) $\frac{5\sin\left(x^6\right)}{6}$, D) $\frac{1}{20}x \sin(4x) + \frac{1}{80} \cos(4x)$, E) $\frac{1}{24} \sin\left(4x^6\right)$

(2) Mennyi $\int x^2 \sin(5x^3)\, dx$?

   A) $\frac{1}{25} \sin(5x) - \frac{1}{5}x \cos(5x)$
   B) $-\frac{1}{15} \cos\left(5x^3\right)$
   C) $-\frac{1}{3} \cos\left(x^3\right)$
   D) 13.2
   E) $-\frac{1}{10} \cos\left(5x^2\right)$

(3) $y' = 3x^2 + 1x + 1$, $y(3) = 4$. Mennyi $y(10)$?

   A) $\frac{2045}{2}$, B) $\frac{2059}{2}$, C) $\frac{2047}{2}$, D) $\frac{2039}{2}$, E) $\frac{2041}{2}$

(4) Mennyi $\int \frac{5x+3}{1+1x^2}\, dx$?

   A) $\frac{5}{2} \log\left(x^2 + 1\right) + 3 \tan^{-1}(x)$
   B) 13.2
   C) 17.3
   D) $\frac{5}{2} \log\left(x^2 + 1\right) - 3 \tan^{-1}(x)$
   E) $-4 \log(3(x-1)) - \log(-3(x+1))$

(5) Mennyi $\int \frac{3}{5^2+4^2x} + \sin(5x) + e^{-3x}\, dx$?

   A) $-\frac{e^{-3x}}{3} - \frac{1}{5} \sin(5x) + \frac{3}{5} \tan^{-1}\left(\frac{4x}{5}\right)$
   B) $-\frac{e^{-3x}}{3} - \frac{1}{5} \cos(5x) + \frac{3}{20} \tan^{-1}\left(\frac{4x}{5}\right)$
   C) $-\frac{e^{-3x}}{3} - \frac{1}{5} \cos(5x) + \frac{3}{16} \tan^{-1}\left(\frac{4x}{5}\right)$
   D) $-\frac{e^{-3x}}{3} + \frac{1}{5} \cos(5x) + \frac{3}{20} \tan^{-1}\left(\frac{4x}{5}\right)$
   E) $-e^{-3x} - \frac{1}{5} \cos(5x) + \frac{3}{20} \tan^{-1}\left(\frac{4x}{5}\right)$

(6) Mennyi $\int_{-3}^{0} f(x)\, dx$, ha $f(x) = \begin{cases} 1 & \text{if } x < 0 \\ 5 + 2x & \text{if } x > 0. \end{cases}$?

   A) -2, B) 0, C) -1, D) 3, E) 1

(7) Mennyi $\int_{-3}^{-1} f(x)\, dx$, ha $f(x) = \begin{cases} 3 + 5x & \text{if } x < 0 \\ 5 & \text{if } x > 0. \end{cases}$?

   A) 7, B) 10, C) 8, D) 6, E) 5

(8) Keresd meg az $f(x) = x^2 - 11x + 10$ es az $g(x) = 5x + 2$ fuggvenyek altal bezart teruletet!

   A) $\frac{4}{3}$, B) $\frac{5}{3}$, C) $\frac{1}{3}$, D) $\frac{2}{3}$, E) $\frac{11}{3}$

(9) Mennyi $\int (4 + 5x) \sin(2x)\, dx$?

   A) $\frac{5}{2}x \sin(2x) - \frac{3}{4} \cos(2x)$
   B) $\frac{5}{4} \sin(2x) - \frac{5}{2}x \cos(2x) - 2 \cos(2x)$
   C) $\frac{5}{8} \sin(2x) - 2 \cos^2(x) - \frac{5}{4}x \cos(2x)$
   D) $\frac{1}{4} \sin(2x) - \frac{1}{2}x \cos(2x) - 2 \cos(2x)$
   E) $-\frac{5}{4} \sin(2x) + \frac{5}{2}x \cos(2x) - 2 \cos(2x)$

(10) Mennyi $\int x^2 \log(3x)\, dx$?

   A) $\frac{1}{4}x^4 \log(3x) - \frac{x^4}{16}$, B) $\frac{1}{3}x^3 \log(3x) - \frac{x^3}{9}$, C) $\frac{1}{2}x^2 \log(3x) - \frac{x^2}{4}$, D) $x^3 \log(3x) - \frac{x^3}{3}$, E) $\frac{1}{3}x^3 \log(x) - \frac{x^3}{9}$

(11) Mennyi $\int \frac{1}{x^3} + \frac{1}{4x^5} + \sqrt[2]{(5x)^2}\, dx$?

   A) $-\frac{1}{1024x^4} + \frac{5x^2}{2} - \frac{1}{2x^2}$, B) $\frac{1}{4096x^4} + \frac{5x^2}{2} + \frac{1}{2x^2}$, C) $-\frac{1}{4096x^4} + \frac{25x^2}{2} - \frac{1}{2x^2}$, D) $-\frac{1}{4096x^4} + \frac{5x^2}{2} - \frac{1}{4x^2}$, E) $-\frac{1}{16x^4} + \frac{5x^2}{2} - \frac{1}{2x^2}$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.6. **No.6.**

(1) Mennyi $\int_{-1}^{6} f(x)\,dx$, ha $f(x) = \begin{cases} 2 & \text{if } x < 0 \\ 2 + 3x & \text{if } x > 0. \end{cases}$?

  A) 63, B) 68, C) 64, D) 65, E) 66

(2) Mennyi $\int x^2 \log(3x)\,dx$?

  A) $\frac{1}{4}x^4 \log(3x) - \frac{x^4}{16}$, B) $\frac{1}{2}x^2 \log(3x) - \frac{x^2}{4}$, C) $\frac{1}{3}x^3 \log(3x) - \frac{x^3}{9}$, D) $\frac{1}{3}x^3 \log(x) - \frac{x^3}{9}$, E) $x^3 \log(3x) - \frac{x^3}{3}$

(3) $y' = 3x^2 + 3x + 1$, $y(3) = 2$. Mennyi $y(10)$?

  A) $\frac{2233}{2}$, B) $\frac{2229}{2}$, C) $\frac{2237}{2}$, D) $\frac{2221}{2}$, E) $\frac{2235}{2}$

(4) Mennyi $\int x^4 \cos(4x^5)\,dx$?

  A) $\frac{1}{16} \sin\left(4x^4\right)$, B) $\frac{4 \sin\left(x^5\right)}{5}$, C) $\frac{1}{4}x \sin(4x) + \frac{1}{16} \cos(4x)$, D) $\frac{1}{16}x \sin(4x) + \frac{1}{64} \cos(4x)$, E) $\frac{1}{20} \sin\left(4x^5\right)$

(5) Mennyi $\int \frac{1}{x^2} + \frac{1}{3x^5} + \sqrt[4]{(4x)^4}\,dx$?

  A) $\frac{1}{972x^4} + 2x^2 + \frac{1}{x}$, B) $-\frac{1}{12x^4} + 2x^2 - \frac{1}{x}$, C) $-\frac{1}{972x^4} + 8x^2 - \frac{1}{x}$, D) $-\frac{1}{324x^4} + 2x^2 - \frac{1}{x}$, E) $-\frac{1}{972x^4} + 2x^2 - \frac{1}{3x}$

(6) Mennyi $\int_{-2}^{2} f(x)\,dx$, ha $f(x) = \begin{cases} 1 + 3x & \text{if } x < 0 \\ 5 & \text{if } x > 0. \end{cases}$?

  A) 14, B) 18, C) 13, D) 15, E) 16

(7) Mennyi $\int x^3 \sin(5x^4)\,dx$?

  A) $\frac{1}{25} \sin(5x) - \frac{1}{5}x \cos(5x)$
  B) 13.2
  C) $-\frac{1}{15} \cos\left(5x^3\right)$
  D) $-\frac{1}{4} \cos\left(x^4\right)$
  E) $-\frac{1}{20} \cos\left(5x^4\right)$

(8) Mennyi $\int \frac{5x+3}{1+1x^2}\,dx$?

  A) 17.3
  B) $-4\log(3(x-1)) - \log(-3(x+1))$
  C) $\frac{5}{2} \log\left(x^2 + 1\right) - 3 \tan^{-1}(x)$
  D) 13.2
  E) $\frac{5}{2} \log\left(x^2 + 1\right) + 3 \tan^{-1}(x)$

(9) Keresd meg az $f(x) = x^2 - 10x + 16$ es az $g(x) = 2x + 1$ fuggvenyek altal bezart teruletet!

  A) $\frac{1}{3}$, B) $\frac{11}{3}$, C) $\frac{2}{3}$, D) $\frac{13}{3}$, E) $\frac{4}{3}$

(10) Mennyi $\int (2 + 4x) \sin(4x)\,dx$?

  A) $\frac{1}{16} \sin(4x) - \frac{1}{4}x \cos(4x) - \frac{1}{8} \cos(4x)$
  B) $x \sin(4x) - \frac{1}{4} \cos(4x)$
  C) $-\frac{1}{4} \sin(4x) + x \cos(4x) - \frac{1}{2} \cos(4x)$
  D) $\frac{1}{4} \sin(4x) - x \cos(4x) - \frac{1}{2} \cos(4x)$
  E) $\frac{1}{16} \sin(4x) - \frac{1}{4}x \cos(4x) - \frac{1}{2} \cos(4x)$

(11) Mennyi $\int \frac{5}{2^2 + 5^2 x} + \sin(4x) + e^{-2x}\,dx$?

  A) $-e^{-2x} - \frac{1}{4} \cos(4x) + \frac{1}{2} \tan^{-1}\left(\frac{5x}{2}\right)$
  B) $-\frac{e^{-2x}}{2} - \frac{1}{4} \cos(4x) + \frac{1}{5} \tan^{-1}\left(\frac{5x}{2}\right)$
  C) $-\frac{e^{-2x}}{2} - \frac{1}{4} \cos(4x) + \frac{1}{2} \tan^{-1}\left(\frac{5x}{2}\right)$
  D) $-\frac{e^{-2x}}{2} - \frac{1}{4} \sin(4x) + \frac{5}{2} \tan^{-1}\left(\frac{5x}{2}\right)$
  E) $-\frac{e^{-2x}}{2} + \frac{1}{4} \cos(4x) + \frac{1}{2} \tan^{-1}\left(\frac{5x}{2}\right)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.7. **No.7.**

(1) Keresd meg az $f(x) = x^2 - 11x + 15$ es az $g(x) = 3x + 3$ fuggvenyek altal bezart teruletet!

A) $\frac{29}{3}$, B) $\frac{5}{3}$, C) $\frac{32}{3}$, D) $\frac{2}{3}$, E) $\frac{20}{3}$

(2) Mennyi $\int x^3 \sin(5x^4)\, dx$?

A) $-\frac{1}{20} \cos\left(5x^4\right)$
B) $-\frac{1}{15} \cos\left(5x^3\right)$
C) $\frac{1}{25} \sin(5x) - \frac{1}{5} x \cos(5x)$
D) $-\frac{1}{4} \cos\left(x^4\right)$
E) 13.2

(3) Mennyi $\int \frac{4}{4^2 + 4^2 x} + \sin(4x) + e^{-4x}\, dx$?

A) $-\frac{e^{-4x}}{4} - \frac{1}{4} \sin(4x) + \tan^{-1}(x)$
B) $-\frac{e^{-4x}}{4} - \frac{1}{4} \cos(4x) + \frac{1}{4} \tan^{-1}(x)$
C) $-e^{-4x} - \frac{1}{4} \cos(4x) + \frac{1}{4} \tan^{-1}(x)$
D) $-\frac{e^{-4x}}{4} + \frac{1}{4} \cos(4x) + \frac{1}{4} \tan^{-1}(x)$
E) 13.2

(4) Mennyi $\int_{-3}^{-2} f(x)\, dx$, ha $f(x) = \begin{cases} 2 & \text{if } x < 0 \\ 5 + 1x & \text{if } x > 0. \end{cases}$?

A) 2, B) -3, C) -1, D) 0, E) -2

(5) $y' = 4x^2 + 5x + 5$, $y(3) = 5$. Mennyi $y(10)$?

A) $\frac{9329}{6}$, B) $\frac{9347}{6}$, C) $\frac{9389}{6}$, D) $\frac{9353}{6}$, E) $\frac{9359}{6}$

(6) Mennyi $\int \frac{5x+3}{1+4x^2}\, dx$?

A) $\frac{1}{8} \log(-3(2x+1)) - \frac{11}{8} \log(3(2x-1))$
B) $\frac{5}{8} \log\left(4x^2 + 1\right) - \frac{3}{2} \tan^{-1}(2x)$
C) $\frac{5}{8} \log\left(4x^2 + 1\right) + \frac{3}{2} \tan^{-1}(2x)$
D) $\frac{5}{2} \log\left(4x^2 + 1\right) + 6 \tan^{-1}(2x)$
E) $\frac{1}{2} \log(-3(2x+1)) - \frac{11}{2} \log(3(2x-1))$

(7) Mennyi $\int_{-3}^{1} f(x)\, dx$, ha $f(x) = \begin{cases} 2 + 3x & \text{if } x < 0 \\ 5 & \text{if } x > 0. \end{cases}$?

A) $\frac{33}{2}$, B) $\frac{27}{2}$, C) $\frac{37}{2}$, D) $\frac{29}{2}$, E) $\frac{31}{2}$

(8) Mennyi $\int (3 + 2x) \sin(3x)\, dx$?

A) $-\frac{2}{9} \sin(3x) + \frac{2}{3} x \cos(3x) - \cos(3x)$
B) $\frac{1}{9} \sin(3x) - \frac{1}{3} x \cos(3x) - \cos(3x)$
C) $\frac{2}{9} \sin(3x) - \frac{2}{3} x \cos(3x) - \cos(3x)$
D) $\frac{2}{27} \sin(3x) - \frac{2}{9} x \cos(3x) - \frac{1}{3} \cos(3x)$
E) $\frac{2}{3} x \sin(3x) - \frac{7}{9} \cos(3x)$

(9) Mennyi $\int x^3 \log(4x)\, dx$?

A) $x^4 \log(4x) - \frac{x^4}{4}$, B) $\frac{1}{4} x^4 \log(4x) - \frac{x^4}{16}$, C) $\frac{1}{5} x^5 \log(4x) - \frac{x^5}{25}$, D) $\frac{1}{3} x^3 \log(4x) - \frac{x^3}{9}$, E) $\frac{1}{4} x^4 \log(x) - \frac{x^4}{16}$

(10) Mennyi $\int \frac{1}{x^2} + \frac{1}{2x^3} + \sqrt[4]{(4x)^3}\, dx$?

A) $\frac{8}{7} \sqrt{2} x^{7/4} - \frac{1}{16x^2} - \frac{1}{3x}$, B) $\frac{32}{7} \sqrt{2} x^{7/4} - \frac{1}{16x^2} - \frac{1}{x}$, C) $\frac{8}{7} \sqrt{2} x^{7/4} - \frac{1}{8x^2} - \frac{1}{x}$, D) $\frac{8}{7} \sqrt{2} x^{7/4} + \frac{1}{16x^2} + \frac{1}{x}$, E) $\frac{8}{7} \sqrt{2} x^{7/4} - \frac{1}{4x^2} - \frac{1}{x}$

(11) Mennyi $\int x^5 \cos(3x^6)\, dx$?

A) $\frac{1}{18} \sin\left(3x^6\right)$, B) $\frac{1}{3} x \sin(3x) + \frac{1}{9} \cos(3x)$, C) $\frac{1}{15} x \sin(3x) + \frac{1}{45} \cos(3x)$, D) $\frac{1}{15} \sin\left(3x^5\right)$, E) $\frac{5 \sin\left(x^6\right)}{6}$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.8. **No.8.**

(1) Mennyi $\int x^3 \log(5x)\,dx$?

   A) $\frac{1}{4}x^4 \log(x) - \frac{x^4}{16}$, B) $\frac{1}{5}x^5 \log(5x) - \frac{x^5}{25}$, C) $\frac{1}{3}x^3 \log(5x) - \frac{x^3}{9}$, D) $\frac{1}{4}x^4 \log(5x) - \frac{x^4}{16}$, E) $\frac{5}{4}x^4 \log(5x) - \frac{5x^4}{16}$

(2) Mennyi $\int_{-2}^{4} f(x)\,dx$, ha $f(x) = \begin{cases} 3 + 2x & \text{if } x < 0 \\ 1 & \text{if } x > 0. \end{cases}$?

   A) 30, B) 29, C) 28, D) 27, E) 26

(3) Mennyi $\int \frac{3}{2^2 + 3^2 x} + \sin(2x) + e^{-3x}\,dx$?

   A) $-\frac{e^{-3x}}{3} + \frac{1}{2}\cos(2x) + \frac{1}{2}\tan^{-1}\left(\frac{3x}{2}\right)$
   B) $-\frac{e^{-3x}}{3} - \frac{1}{2}\sin(2x) + \frac{3}{2}\tan^{-1}\left(\frac{3x}{2}\right)$
   C) $-\frac{e^{-3x}}{3} - \frac{1}{2}\cos(2x) + \frac{1}{2}\tan^{-1}\left(\frac{3x}{2}\right)$
   D) $-e^{-3x} - \frac{1}{2}\cos(2x) + \frac{1}{2}\tan^{-1}\left(\frac{3x}{2}\right)$
   E) $-\frac{e^{-3x}}{3} - \frac{1}{2}\cos(2x) + \frac{1}{3}\tan^{-1}\left(\frac{3x}{2}\right)$

(4) Mennyi $\int_{-4}^{0} f(x)\,dx$, ha $f(x) = \begin{cases} 2 & \text{if } x < 0 \\ 3 + 4x & \text{if } x > 0. \end{cases}$?

   A) 8, B) 4, C) 3, D) 5, E) 6

(5) Mennyi $\int (2 + 2x)\sin(4x)\,dx$?

   A) $\frac{1}{8}\sin(4x) - \frac{1}{2}x\cos(4x) - \frac{1}{2}\cos(4x)$
   B) $\frac{1}{32}\sin(4x) - \frac{1}{8}x\cos(4x) - \frac{1}{8}\cos(4x)$
   C) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x) - \frac{1}{2}\cos(4x)$
   D) $-\frac{1}{8}\sin(4x) + \frac{1}{2}x\cos(4x) - \frac{1}{2}\cos(4x)$
   E) $\frac{1}{2}x\sin(4x) - \frac{3}{8}\cos(4x)$

(6) Mennyi $\int \frac{4x+4}{1+4x^2}\,dx$?

   A) $\frac{1}{2}\log\left(4x^2 + 1\right) - 2\tan^{-1}(2x)$
   B) $\frac{1}{2}\log(-4(2x + 1)) - \frac{3}{2}\log(4(2x - 1))$
   C) $2\log\left(4x^2 + 1\right) + 8\tan^{-1}(2x)$
   D) $\frac{1}{2}\log\left(4x^2 + 1\right) + 2\tan^{-1}(2x)$
   E) $2\log(2x + 1) - 6\log(1 - 2x)$

(7) Mennyi $\int x^2 \sin(2x^3)\,dx$?

   A) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x)$
   B) $-\frac{1}{3}\cos\left(x^3\right)$
   C) $-\frac{1}{6}\cos\left(2x^3\right)$
   D) $-\frac{1}{4}\cos\left(2x^2\right)$
   E) 13.2

(8) $y' = 2x^2 + 4x + 2$, $y(3) = 5$. Mennyi $y(10)$?

   A) $\frac{2525}{3}$, B) $\frac{2531}{3}$, C) $\frac{2519}{3}$, D) $\frac{2534}{3}$, E) $\frac{2549}{3}$

(9) Mennyi $\int \frac{1}{x^4} + \frac{1}{4x^4} + \sqrt[5]{(5x)^2}\,dx$?

   A) $\frac{5}{7}5^{2/5}x^{7/5} - \frac{65}{192x^3}$, B) $\frac{5}{7}5^{2/5}x^{7/5} - \frac{773}{3840x^3}$, C) $\frac{5}{7}5^{2/5}x^{7/5} - \frac{5}{12x^3}$, D) $\frac{5}{7}5^{2/5}x^{7/5} + \frac{257}{768x^3}$, E) $\frac{25}{7}5^{2/5}x^{7/5} - \frac{257}{768x^3}$

(10) Mennyi $\int x^5 \cos(4x^6)\,dx$?

   A) $\frac{1}{20}\sin\left(4x^5\right)$, B) $\frac{1}{4}x\sin(4x) + \frac{1}{16}\cos(4x)$, C) $\frac{5\sin\left(x^6\right)}{6}$, D) $\frac{1}{24}\sin\left(4x^6\right)$, E) $\frac{1}{20}x\sin(4x) + \frac{1}{80}\cos(4x)$

(11) Keresd meg az $f(x) = x^2 - 16x + 35$ es az $g(x) = 4x + 3$ fuggvenyek altal bezart teruletet!

   A) $\frac{20}{3}$, B) $\frac{32}{3}$, C) $\frac{26}{3}$, D) $\frac{17}{3}$, E) $\frac{11}{3}$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.9. **No.9.**

(1) Mennyi $\int \frac{2x+4}{1+1x^2}\,dx$?

     A) $\log(2(x+1)) - 3\log(-2(x-1))$

     B) 13.2

     C) 17.3

     D) $\log\left(x^2+1\right) - 4\tan^{-1}(x)$

     E) $\log\left(x^2+1\right) + 4\tan^{-1}(x)$

(2) Mennyi $\int x^3 \sin(4x^4)\,dx$?

     A) $-\frac{1}{4}\cos\left(x^4\right)$

     B) $-\frac{1}{12}\cos\left(4x^3\right)$

     C) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x)$

     D) $-\frac{1}{16}\cos\left(4x^4\right)$

     E) 13.2

(3) Mennyi $\int (2+2x)\sin(5x)\,dx$?

     A) $\frac{2}{25}\sin(5x) - \frac{2}{5}x\cos(5x) - \frac{2}{5}\cos(5x)$

     B) $\frac{2}{5}x\sin(5x) - \frac{8}{25}\cos(5x)$

     C) $-\frac{2}{25}\sin(5x) + \frac{2}{5}x\cos(5x) - \frac{2}{5}\cos(5x)$

     D) $\frac{2}{125}\sin(5x) - \frac{2}{25}x\cos(5x) - \frac{2}{25}\cos(5x)$

     E) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \frac{2}{5}\cos(5x)$

(4) Mennyi $\int_{-1}^{0} f(x)\,dx$, ha $f(x) = \begin{cases} 4 & \text{if } x < 0 \\ 3+1x & \text{if } x > 0. \end{cases}$?

     A) 1, B) -1, C) 0, D) 2, E) 4

(5) Mennyi $\int_{-1}^{5} f(x)\,dx$, ha $f(x) = \begin{cases} 2+4x & \text{if } x < 0 \\ 4 & \text{if } x > 0. \end{cases}$?

     A) 64, B) 62, C) 61, D) 60, E) 59

(6) Keresd meg az $f(x) = x^2 - 10x + 9$ es az $g(x) = 4x + 4$ fuggvenyek altal bezart teruletet!

     A) $\frac{14}{3}$, B) $\frac{32}{3}$, C) $\frac{2}{3}$, D) $\frac{5}{3}$, E) $\frac{8}{3}$

(7) Mennyi $\int \frac{3}{4^2+4^2x} + \sin(5x) + e^{-4x}\,dx$?

     A) $-e^{-4x} - \frac{1}{5}\cos(5x) + \frac{3}{16}\tan^{-1}(x)$

     B) $-\frac{e^{-4x}}{4} + \frac{1}{5}\cos(5x) + \frac{3}{16}\tan^{-1}(x)$

     C) $-\frac{e^{-4x}}{4} - \frac{1}{5}\cos(5x) + \frac{3}{16}\tan^{-1}(x)$

     D) $-\frac{e^{-4x}}{4} - \frac{1}{5}\sin(5x) + \frac{3}{4}\tan^{-1}(x)$

     E) 13.2

(8) Mennyi $\int x^2 \log(4x)\,dx$?

     A) $\frac{1}{2}x^2\log(4x) - \frac{x^2}{4}$, B) $\frac{1}{4}x^4\log(4x) - \frac{x^4}{16}$, C) $\frac{1}{3}x^3\log(x) - \frac{x^3}{9}$, D) $\frac{4}{3}x^3\log(4x) - \frac{4x^3}{9}$, E) $\frac{1}{3}x^3\log(4x) - \frac{x^3}{9}$

(9) Mennyi $\int x^5 \cos(2x^6)\,dx$?

     A) $\frac{5\sin\left(x^6\right)}{6}$, B) $\frac{1}{2}x\sin(2x) + \frac{1}{4}\cos(2x)$, C) $\frac{1}{12}\sin\left(2x^6\right)$, D) $\frac{1}{10}\sin\left(2x^5\right)$, E) $\frac{1}{10}x\sin(2x) + \frac{1}{20}\cos(2x)$

(10) $y' = 1x^2 + 5x + 1$, $y(4) = 3$. Mennyi $y(10)$?

     A) 524, B) 521, C) 531, D) 529, E) 527

(11) Mennyi $\int \frac{1}{x^4} + \frac{1}{5x^3} + \sqrt[3]{(5x)^2}\,dx$?

     A) $\frac{3x^{5/3}}{\sqrt[3]{5}} + \frac{1}{3x^3} + \frac{1}{250x^2}$, B) $\frac{3x^{5/3}}{\sqrt[3]{5}} - \frac{1}{5x^3} - \frac{1}{250x^2}$, C) $35^{2/3}x^{5/3} - \frac{1}{3x^3} - \frac{1}{250x^2}$, D) $\frac{3x^{5/3}}{\sqrt[3]{5}} - \frac{1}{3x^3} - \frac{1}{10x^2}$, E) $\frac{3x^{5/3}}{\sqrt[3]{5}} - \frac{1}{3x^3} - \frac{1}{50x^2}$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.10. **No.10.**

(1) Mennyi $\int x^2 \log(4x)\,dx$?

     A) $\frac{1}{2}x^2 \log(4x) - \frac{x^2}{4}$, B) $\frac{1}{3}x^3 \log(4x) - \frac{x^3}{9}$, C) $\frac{4}{3}x^3 \log(4x) - \frac{4x^3}{9}$, D) $\frac{1}{3}x^3 \log(x) - \frac{x^3}{9}$, E) $\frac{1}{4}x^4 \log(4x) - \frac{x^4}{16}$

(2) Mennyi $\int x^5 \cos(3x^6)\,dx$?

     A) $\frac{1}{15}x \sin(3x) + \frac{1}{45}\cos(3x)$, B) $\frac{1}{18}\sin\left(3x^6\right)$, C) $\frac{1}{3}x \sin(3x) + \frac{1}{9}\cos(3x)$, D) $\frac{5\sin\left(x^6\right)}{6}$, E) $\frac{1}{15}\sin\left(3x^5\right)$

(3) Mennyi $\int \frac{4x+5}{1+1x^2}\,dx$?

     A) $\frac{1}{2}\log(-5(x+1)) - \frac{9}{2}\log(5(x-1))$
     B) $2\log\left(x^2+1\right) + 5\tan^{-1}(x)$
     C) $2\log\left(x^2+1\right) - 5\tan^{-1}(x)$
     D) 17.3
     E) 13.2

(4) Mennyi $\int \frac{1}{x^3} + \frac{1}{4x^4} + \sqrt[2]{(5x)^3}\,dx$?

     A) $10\sqrt{5}x^{5/2} - \frac{1}{768x^3} - \frac{1}{2x^2}$, B) $2\sqrt{5}x^{5/2} - \frac{1}{192x^3} - \frac{1}{2x^2}$, C) $2\sqrt{5}x^{5/2} - \frac{1}{768x^3} - \frac{1}{4x^2}$, D) $2\sqrt{5}x^{5/2} + \frac{1}{768x^3} + \frac{1}{2x^2}$, E) $2\sqrt{5}x^{5/2} - \frac{1}{12x^3} - \frac{1}{2x^2}$

(5) Mennyi $\int x^5 \sin(5x^6)\,dx$?

     A) $-\frac{1}{25}\cos\left(5x^5\right)$
     B) $-\frac{1}{6}\cos\left(x^6\right)$
     C) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x)$
     D) $-\frac{1}{30}\cos\left(5x^6\right)$
     E) 13.2

(6) Mennyi $\int \frac{4}{2^2+5^2x} + \sin(2x) + e^{-5x}\,dx$?

     A) $-e^{-5x} - \frac{1}{2}\cos(2x) + \frac{2}{5}\tan^{-1}\left(\frac{5x}{2}\right)$
     B) $-\frac{e^{-5x}}{5} - \frac{1}{2}\cos(2x) + \frac{2}{5}\tan^{-1}\left(\frac{5x}{2}\right)$
     C) $-\frac{e^{-5x}}{5} - \frac{1}{2}\sin(2x) + 2\tan^{-1}\left(\frac{5x}{2}\right)$
     D) $-\frac{e^{-5x}}{5} - \frac{1}{2}\cos(2x) + \frac{4}{25}\tan^{-1}\left(\frac{5x}{2}\right)$
     E) $-\frac{e^{-5x}}{5} + \frac{1}{2}\cos(2x) + \frac{2}{5}\tan^{-1}\left(\frac{5x}{2}\right)$

(7) $y' = 1x^2 + 3x + 1$, $y(2) = 2$. Mennyi $y(10)$?

     A) $\frac{1427}{3}$, B) $\frac{1424}{3}$, C) $\frac{1433}{3}$, D) $\frac{1454}{3}$, E) $\frac{1442}{3}$

(8) Mennyi $\int (3 + 3x)\sin(5x)\,dx$?

     A) $-\frac{3}{25}\sin(5x) + \frac{3}{5}x\cos(5x) - \frac{3}{5}\cos(5x)$
     B) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \frac{3}{5}\cos(5x)$
     C) $\frac{3}{5}x\sin(5x) - \frac{12}{25}\cos(5x)$
     D) $\frac{3}{125}\sin(5x) - \frac{3}{25}x\cos(5x) - \frac{3}{25}\cos(5x)$
     E) $\frac{3}{25}\sin(5x) - \frac{3}{5}x\cos(5x) - \frac{3}{5}\cos(5x)$

(9) Mennyi $\int_{-4}^{-2} f(x)\,dx$, ha $f(x) = \begin{cases} 1 + 2x & \text{if } x < 0 \\ 1 & \text{if } x > 0. \end{cases}$?

     A) -3, B) 0, C) 2, D) 1, E) -1

(10) Mennyi $\int_{-2}^{-1} f(x)\,dx$, ha $f(x) = \begin{cases} 1 & \text{if } x < 0 \\ 5 + 4x & \text{if } x > 0. \end{cases}$?

     A) -3, B) -1, C) 1, D) -2, E) -4

(11) Keresd meg az $f(x) = x^2 - 9x + 9$ es az $g(x) = 3x + 4$ fuggvenyek altal bezart teruletet!

     A) $\frac{14}{3}$, B) $\frac{2}{3}$, C) $\frac{5}{3}$, D) $\frac{11}{3}$, E) $\frac{32}{3}$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.11. **No.11.**

(1) Mennyi $\int_{-3}^{2} f(x)\,dx$, ha $f(x) = \begin{cases} 3 & \text{if } x < 0 \\ 2 + 3x & \text{if } x > 0. \end{cases}$?

   A) 14, B) 17, C) 19, D) 15, E) 16

(2) $y' = 2x^2 + 4x + 5$, $y(3) = 4$. Mennyi $y(10)$?

   A) $\frac{2588}{3}$, B) $\frac{2582}{3}$, C) $\frac{2609}{3}$, D) $\frac{2585}{3}$, E) $\frac{2597}{3}$

(3) Mennyi $\int x^2 \sin(3x^3)\,dx$?

   A) $-\frac{1}{3}\cos\left(x^3\right)$
   B) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x)$
   C) 13.2
   D) $-\frac{1}{6}\cos\left(3x^2\right)$
   E) $-\frac{1}{9}\cos\left(3x^3\right)$

(4) Mennyi $\int x^4 \cos(5x^5)\,dx$?

   A) $\frac{1}{20}x\sin(5x) + \frac{1}{100}\cos(5x)$, B) $\frac{4\sin\left(x^5\right)}{5}$, C) $\frac{1}{20}\sin\left(5x^4\right)$, D) $\frac{1}{25}\sin\left(5x^5\right)$, E) $\frac{1}{5}x\sin(5x) + \frac{1}{25}\cos(5x)$

(5) Mennyi $\int \frac{1}{x^3} + \frac{1}{5x^3} + \sqrt[4]{(2x)^2}\,dx$?

   A) $\frac{2}{3}\sqrt{2}x^{3/2} + \frac{63}{125x^2}$, B) $\frac{2}{3}\sqrt{2}x^{3/2} - \frac{13}{25x^2}$, C) $\frac{2}{3}\sqrt{2}x^{3/2} - \frac{127}{500x^2}$, D) $\frac{4}{3}\sqrt{2}x^{3/2} - \frac{63}{125x^2}$, E) $\frac{2}{3}\sqrt{2}x^{3/2} - \frac{3}{5x^2}$

(6) Mennyi $\int_{-4}^{3} f(x)\,dx$, ha $f(x) = \begin{cases} 2 + 2x & \text{if } x < 0 \\ 1 & \text{if } x > 0. \end{cases}$?

   A) 16, B) 19, C) 17, D) 14, E) 20

(7) Mennyi $\int x^2 \log(5x)\,dx$?

   A) $\frac{1}{2}x^2\log(5x) - \frac{x^2}{4}$, B) $\frac{1}{4}x^4\log(5x) - \frac{x^4}{16}$, C) $\frac{1}{3}x^3\log(x) - \frac{x^3}{9}$, D) $\frac{5}{3}x^3\log(5x) - \frac{5x^3}{9}$, E) $\frac{1}{3}x^3\log(5x) - \frac{x^3}{9}$

(8) Mennyi $\int \frac{4}{5^2 + 3^2 x} + \sin(4x) + e^{-2x}\,dx$?

   A) $-\frac{e^{-2x}}{2} - \frac{1}{4}\cos(4x) + \frac{4}{15}\tan^{-1}\left(\frac{3x}{5}\right)$
   B) $-\frac{e^{-2x}}{2} - \frac{1}{4}\sin(4x) + \frac{4}{5}\tan^{-1}\left(\frac{3x}{5}\right)$
   C) $-e^{-2x} - \frac{1}{4}\cos(4x) + \frac{4}{15}\tan^{-1}\left(\frac{3x}{5}\right)$
   D) $-\frac{e^{-2x}}{2} + \frac{1}{4}\cos(4x) + \frac{4}{15}\tan^{-1}\left(\frac{3x}{5}\right)$
   E) $-\frac{e^{-2x}}{2} - \frac{1}{4}\cos(4x) + \frac{4}{9}\tan^{-1}\left(\frac{3x}{5}\right)$

(9) Mennyi $\int (2 + 3x)\sin(5x)\,dx$?

   A) $\frac{3}{125}\sin(5x) - \frac{3}{25}x\cos(5x) - \frac{2}{25}\cos(5x)$
   B) $-\frac{3}{25}\sin(5x) + \frac{3}{5}x\cos(5x) - \frac{2}{5}\cos(5x)$
   C) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \frac{2}{5}\cos(5x)$
   D) $\frac{3}{5}x\sin(5x) - \frac{7}{25}\cos(5x)$
   E) $\frac{3}{25}\sin(5x) - \frac{3}{5}x\cos(5x) - \frac{2}{5}\cos(5x)$

(10) Mennyi $\int \frac{3x+4}{1+4x^2}\,dx$?

   A) $\frac{5}{8}\log(-4(2x+1)) - \frac{11}{8}\log(4(2x-1))$
   B) $\frac{3}{8}\log\left(4x^2 + 1\right) - 2\tan^{-1}(2x)$
   C) $\frac{3}{2}\log\left(4x^2 + 1\right) + 8\tan^{-1}(2x)$
   D) $\frac{5}{2}\log(-4(2x+1)) - \frac{11}{2}\log(4(2x-1))$
   E) $\frac{3}{8}\log\left(4x^2 + 1\right) + 2\tan^{-1}(2x)$

(11) Keresd meg az $f(x) = x^2 - 10x + 10$ es az $g(x) = 4x + 2$ fuggvenyek altal bezart teruletet!

   A) $\frac{2}{3}$, B) $\frac{5}{3}$, C) $\frac{1}{3}$, D) $\frac{4}{3}$, E) $\frac{10}{3}$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.12. **No.12.**

(1) Mennyi $\int x^5 \cos(3x^6)\, dx$?

  A) $\frac{1}{3}x\sin(3x) + \frac{1}{9}\cos(3x)$, B) $\frac{1}{15}x\sin(3x) + \frac{1}{45}\cos(3x)$, C) $\frac{1}{15}\sin\left(3x^5\right)$, D) $\frac{5\sin\left(x^6\right)}{6}$, E) $\frac{1}{18}\sin\left(3x^6\right)$

(2) Keresd meg az $f(x) = x^2 - 12x + 8$ es az $g(x) = 5x + 2$ fuggvenyek altal bezart teruletet!

  A) $\frac{89}{6}$, B) $\frac{125}{6}$, C) $\frac{77}{6}$, D) $\frac{83}{6}$, E) $\frac{95}{6}$

(3) Mennyi $\int \frac{1}{x^4} + \frac{1}{4x^3} + \sqrt[2]{(3x)^3}\, dx$?

  A) $\frac{18}{5}\sqrt{3}x^{5/2} - \frac{1}{3x^3} - \frac{1}{128x^2}$, B) $\frac{6}{5}\sqrt{3}x^{5/2} - \frac{1}{3x^3} - \frac{1}{32x^2}$, C) $\frac{6}{5}\sqrt{3}x^{5/2} - \frac{1}{5x^3} - \frac{1}{128x^2}$, D) $\frac{6}{5}\sqrt{3}x^{5/2} + \frac{1}{3x^3} + \frac{1}{128x^2}$, E) $\frac{6}{5}\sqrt{3}x^{5/2} - \frac{1}{3x^3} - \frac{1}{8x^2}$

(4) Mennyi $\int \frac{4x+3}{1+9x^2}\, dx$?

  A) $\frac{2}{9}\log\left(9x^2 + 1\right) + \tan^{-1}(3x)$
  B) $\frac{5}{18}\log(-3(3x+1)) - \frac{13}{18}\log(3(3x-1))$
  C) $\frac{5}{2}\log(-3(3x+1)) - \frac{13}{2}\log(3(3x-1))$
  D) $\frac{2}{9}\log\left(9x^2 + 1\right) - \tan^{-1}(3x)$
  E) $2\log\left(9x^2 + 1\right) + 9\tan^{-1}(3x)$

(5) Mennyi $\int x^2 \sin(5x^3)\, dx$?

  A) $-\frac{1}{3}\cos\left(x^3\right)$
  B) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x)$
  C) $-\frac{1}{10}\cos\left(5x^2\right)$
  D) $-\frac{1}{15}\cos\left(5x^3\right)$
  E) 13.2

(6) $y' = 3x^2 + 2x + 5$, $y(5) = 3$. Mennyi $y(10)$?

  A) 968, B) 978, C) 970, D) 969, E) 971

(7) Mennyi $\int x^5 \log(5x)\, dx$?

  A) $\frac{1}{6}x^6\log(5x) - \frac{x^6}{36}$, B) $\frac{1}{7}x^7\log(5x) - \frac{x^7}{49}$, C) $\frac{5}{6}x^6\log(5x) - \frac{5x^6}{36}$, D) $\frac{1}{6}x^6\log(x) - \frac{x^6}{36}$, E) $\frac{1}{5}x^5\log(5x) - \frac{x^5}{25}$

(8) Mennyi $\int_{-1}^{5} f(x)\, dx$, ha $f(x) = \begin{cases} 3 + 2x & \text{if } x < 0 \\ 5 & \text{if } x > 0. \end{cases}$?

  A) 44, B) 45, C) 42, D) 47, E) 41

(9) Mennyi $\int (2 + 4x) \sin(2x)\, dx$?

  A) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x) - \cos(2x)$
  B) $\sin(2x) - 2x\cos(2x) - \cos(2x)$
  C) $\frac{1}{2}\sin(2x) - x\cos(2x) - \frac{1}{2}\cos(2x)$
  D) $2x\sin(2x)$
  E) $-\sin(2x) + 2x\cos(2x) - \cos(2x)$

(10) Mennyi $\int \frac{5}{3^2 + 3^2 x} + \sin(4x) + e^{-2x}\, dx$?

  A) 13.2
  B) $-\frac{e^{-2x}}{2} - \frac{1}{4}\cos(4x) + \frac{5}{9}\tan^{-1}(x)$
  C) $-\frac{e^{-2x}}{2} - \frac{1}{4}\sin(4x) + \frac{5}{3}\tan^{-1}(x)$
  D) $-\frac{e^{-2x}}{2} + \frac{1}{4}\cos(4x) + \frac{5}{9}\tan^{-1}(x)$
  E) $-e^{-2x} - \frac{1}{4}\cos(4x) + \frac{5}{9}\tan^{-1}(x)$

(11) Mennyi $\int_{-3}^{1} f(x)\, dx$, ha $f(x) = \begin{cases} 1 & \text{if } x < 0 \\ 3 + 3x & \text{if } x > 0. \end{cases}$?

  A) $\frac{7}{2}$, B) $\frac{5}{2}$, C) $\frac{15}{2}$, D) $\frac{11}{2}$, E) $\frac{9}{2}$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.13. **No.13.**

(1) Mennyi $\int x^2 \cos(3x^3)\,dx$?

A) $\frac{1}{6}x\sin(3x) + \frac{1}{18}\cos(3x)$, B) $\frac{1}{6}\sin\left(3x^2\right)$, C) $\frac{1}{3}x\sin(3x) + \frac{1}{9}\cos(3x)$, D) $\frac{1}{9}\sin\left(3x^3\right)$, E) $\frac{2\sin\left(x^3\right)}{3}$

(2) Mennyi $\int x^3 \sin(2x^4)\,dx$?

A) $-\frac{1}{4}\cos\left(x^4\right)$
B) $-\frac{1}{8}\cos\left(2x^4\right)$
C) $-\frac{1}{6}\cos\left(2x^3\right)$
D) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x)$
E) 13.2

(3) Keresd meg az $f(x) = x^2 - 11x + 12$ es az $g(x) = 5x + 4$ fuggvenyek altal bezart teruletet!

A) $\frac{5}{3}$, B) $\frac{11}{3}$, C) $\frac{10}{3}$, D) $\frac{4}{3}$, E) $\frac{8}{3}$

(4) Mennyi $\int_{-3}^{4} f(x)\,dx$, ha $f(x) = \begin{cases} 1 + 1x & \text{if } x < 0 \\ 3 & \text{if } x > 0. \end{cases}$?

A) 18, B) 17, C) 19, D) 16, E) 21

(5) Mennyi $\int \frac{1}{x^2} + \frac{1}{5x^5} + \sqrt[5]{(3x)^4}\,dx$?

A) $\frac{5x^{9/5}}{3\sqrt[5]{3}} - \frac{1}{12500x^4} - \frac{1}{3x}$, B) $\frac{5x^{9/5}}{3\sqrt[5]{3}} - \frac{1}{20x^4} - \frac{1}{x}$, C) $\frac{5x^{9/5}}{\sqrt[5]{3}} - \frac{1}{12500x^4} - \frac{1}{x}$, D) $\frac{5x^{9/5}}{3\sqrt[5]{3}} + \frac{1}{12500x^4} + \frac{1}{x}$, E) $\frac{5x^{9/5}}{3\sqrt[5]{3}} - \frac{1}{2500x^4} - \frac{1}{x}$

(6) Mennyi $\int_{-1}^{0} f(x)\,dx$, ha $f(x) = \begin{cases} 2 & \text{if } x < 0 \\ 1 + 5x & \text{if } x > 0. \end{cases}$?

A) 3, B) 2, C) 0, D) -1, E) -2

(7) Mennyi $\int \frac{4x+4}{1+1x^2}\,dx$?

A) $2\log\left(x^2 + 1\right) + 4\tan^{-1}(x)$
B) 17.3
C) $-4\log(x - 1)$
D) 13.2
E) $2\log\left(x^2 + 1\right) - 4\tan^{-1}(x)$

(8) Mennyi $\int \frac{3}{5^2+3^2x} + \sin(4x) + e^{-3x}\,dx$?

A) $-\frac{e^{-3x}}{3} - \frac{1}{4}\sin(4x) + \frac{3}{5}\tan^{-1}\left(\frac{3x}{5}\right)$
B) $-e^{-3x} - \frac{1}{4}\cos(4x) + \frac{1}{5}\tan^{-1}\left(\frac{3x}{5}\right)$
C) $-\frac{e^{-3x}}{3} - \frac{1}{4}\cos(4x) + \frac{1}{5}\tan^{-1}\left(\frac{3x}{5}\right)$
D) $-\frac{e^{-3x}}{3} + \frac{1}{4}\cos(4x) + \frac{1}{5}\tan^{-1}\left(\frac{3x}{5}\right)$
E) $-\frac{e^{-3x}}{3} - \frac{1}{4}\cos(4x) + \frac{1}{3}\tan^{-1}\left(\frac{3x}{5}\right)$

(9) Mennyi $\int (5 + 3x)\sin(5x)\,dx$?

A) $-\frac{3}{25}\sin(5x) + \frac{3}{5}x\cos(5x) - \cos(5x)$
B) $\frac{3}{25}\sin(5x) - \frac{3}{5}x\cos(5x) - \cos(5x)$
C) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \cos(5x)$
D) $\frac{3}{125}\sin(5x) - \frac{3}{25}x\cos(5x) - \frac{1}{5}\cos(5x)$
E) $\frac{3}{5}x\sin(5x) - \frac{22}{25}\cos(5x)$

(10) Mennyi $\int x^3 \log(3x)\,dx$?

A) $\frac{1}{5}x^5\log(3x) - \frac{x^5}{25}$, B) $\frac{1}{4}x^4\log(x) - \frac{x^4}{16}$, C) $\frac{1}{3}x^3\log(3x) - \frac{x^3}{9}$, D) $\frac{3}{4}x^4\log(3x) - \frac{3x^4}{16}$, E) $\frac{1}{4}x^4\log(3x) - \frac{x^4}{16}$

(11) $y' = 1x^2 + 1x + 3$, $y(1) = 5$. Mennyi $y(10)$?

A) $\frac{823}{2}$, B) $\frac{809}{2}$, C) $\frac{817}{2}$, D) $\frac{821}{2}$, E) $\frac{829}{2}$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.14. **No.14.**

(1) Keresd meg az $f(x) = x^2 - 10x + 10$ es az $g(x) = 4x + 2$ fuggvenyek altal bezart teruletet!

A) $\frac{4}{3}$, B) $\frac{7}{3}$, C) $\frac{5}{3}$, D) $\frac{1}{3}$, E) $\frac{2}{3}$

(2) Mennyi $\int \frac{1}{x^4} + \frac{1}{3x^4} + \sqrt[4]{(3x)^4}\, dx$?

A) $\frac{3x^2}{2} - \frac{4}{9x^3}$, B) $\frac{3x^2}{2} - \frac{28}{81x^3}$, C) $\frac{3x^2}{2} - \frac{248}{1215x^3}$, D) $\frac{9x^2}{2} - \frac{82}{243x^3}$, E) $\frac{82}{243x^3} + \frac{3x^2}{2}$

(3) Mennyi $\int \frac{2}{2^2+5^2x} + \sin(3x) + e^{-3x}\, dx$?

A) $-\frac{e^{-3x}}{3} + \frac{1}{3}\cos(3x) + \frac{1}{5}\tan^{-1}\left(\frac{5x}{2}\right)$
B) $-\frac{e^{-3x}}{3} - \frac{1}{3}\sin(3x) + \tan^{-1}\left(\frac{5x}{2}\right)$
C) $-\frac{e^{-3x}}{3} - \frac{1}{3}\cos(3x) + \frac{1}{5}\tan^{-1}\left(\frac{5x}{2}\right)$
D) $-\frac{e^{-3x}}{3} - \frac{1}{3}\cos(3x) + \frac{2}{25}\tan^{-1}\left(\frac{5x}{2}\right)$
E) $-e^{-3x} - \frac{1}{3}\cos(3x) + \frac{1}{5}\tan^{-1}\left(\frac{5x}{2}\right)$

(4) $y' = 5x^2 + 1x + 4$, $y(5) = 5$. Mennyi $y(10)$?

A) $\frac{9083}{6}$, B) $\frac{9089}{6}$, C) $\frac{9095}{6}$, D) $\frac{9125}{6}$, E) $\frac{9071}{6}$

(5) Mennyi $\int_{-3}^{-1} f(x)\, dx$, ha $f(x) = \begin{cases} 3 + 4x & \text{if } x < 0 \\ 3 & \text{if } x > 0. \end{cases}$?

A) 6, B) 3, C) 5, D) 4, E) 2

(6) Mennyi $\int \frac{3x+3}{1+9x^2}\, dx$?

A) $\frac{1}{6}\log\left(9x^2 + 1\right) + \tan^{-1}(3x)$
B) $3\log(3x + 1) - 6\log(1 - 3x)$
C) $\frac{1}{3}\log(-3(3x + 1)) - \frac{2}{3}\log(3(3x - 1))$
D) $\frac{3}{2}\log\left(9x^2 + 1\right) + 9\tan^{-1}(3x)$
E) $\frac{1}{6}\log\left(9x^2 + 1\right) - \tan^{-1}(3x)$

(7) Mennyi $\int x^4 \sin(5x^5)\, dx$?

A) $-\frac{1}{20}\cos\left(5x^4\right)$
B) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x)$
C) 13.2
D) $-\frac{1}{5}\cos\left(x^5\right)$
E) $-\frac{1}{25}\cos\left(5x^5\right)$

(8) Mennyi $\int_{-2}^{2} f(x)\, dx$, ha $f(x) = \begin{cases} 2 & \text{if } x < 0 \\ 4 + 5x & \text{if } x > 0. \end{cases}$?

A) 21, B) 18, C) 20, D) 22, E) 17

(9) Mennyi $\int x^3 \log(2x)\, dx$?

A) $\frac{1}{4}x^4\log(2x) - \frac{x^4}{16}$, B) $\frac{1}{2}x^4\log(2x) - \frac{x^4}{8}$, C) $\frac{1}{4}x^4\log(x) - \frac{x^4}{16}$, D) $\frac{1}{3}x^3\log(2x) - \frac{x^3}{9}$, E) $\frac{1}{5}x^5\log(2x) - \frac{x^5}{25}$

(10) Mennyi $\int (3 + 4x)\sin(3x)\, dx$?

A) $\frac{4}{9}\sin(3x) - \frac{4}{3}x\cos(3x) - \cos(3x)$
B) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x) - \cos(3x)$
C) $-\frac{4}{9}\sin(3x) + \frac{4}{3}x\cos(3x) - \cos(3x)$
D) $\frac{4}{3}x\sin(3x) - \frac{5}{9}\cos(3x)$
E) $\frac{4}{27}\sin(3x) - \frac{4}{9}x\cos(3x) - \frac{1}{3}\cos(3x)$

(11) Mennyi $\int x^4 \cos(5x^5)\, dx$?

A) $\frac{1}{20}x\sin(5x) + \frac{1}{100}\cos(5x)$, B) $\frac{4\sin\left(x^5\right)}{5}$, C) $\frac{1}{20}\sin\left(5x^4\right)$, D) $\frac{1}{25}\sin\left(5x^5\right)$, E) $\frac{1}{5}x\sin(5x) + \frac{1}{25}\cos(5x)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.15. **No.15.**

(1) $y' = 4x^2 + 3x + 5$, $y(4) = 4$. Mennyi $y(10)$?

      A) 1400, B) 1399, C) 1408, D) 1398, E) 1402

(2) Mennyi $\int_{-2}^{4} f(x)\,dx$, ha $f(x) = \begin{cases} 1 + 1x & \text{if } x < 0 \\ 2 & \text{if } x > 0. \end{cases}$?

      A) 13, B) 11, C) 14, D) 12, E) 16

(3) Mennyi $\int x^3 \cos(4x^4)\,dx$?

      A) $\frac{1}{12}\sin\left(4x^3\right)$, B) $\frac{1}{4}x\sin(4x) + \frac{1}{16}\cos(4x)$, C) $\frac{1}{12}x\sin(4x) + \frac{1}{48}\cos(4x)$, D) $\frac{1}{16}\sin\left(4x^4\right)$, E) $\frac{3\sin\left(x^4\right)}{4}$

(4) Mennyi $\int_{-1}^{6} f(x)\,dx$, ha $f(x) = \begin{cases} 1 & \text{if } x < 0 \\ 2 + 2x & \text{if } x > 0. \end{cases}$?

      A) 46, B) 45, C) 47, D) 44, E) 49

(5) Mennyi $\int \frac{1}{x^5} + \frac{1}{4x^4} + \sqrt[2]{(3x)^4}\,dx$?

      A) $\frac{1}{4x^4} + 3x^3 + \frac{1}{768x^3}$, B) $-\frac{1}{6x^4} + 3x^3 - \frac{1}{768x^3}$, C) $-\frac{1}{4x^4} + 9x^3 - \frac{1}{768x^3}$, D) $-\frac{1}{4x^4} + 3x^3 - \frac{1}{192x^3}$, E) $-\frac{1}{4x^4} + 3x^3 - \frac{1}{12x^3}$

(6) Mennyi $\int x^4 \log(4x)\,dx$?

      A) $\frac{1}{6}x^6 \log(4x) - \frac{x^6}{36}$, B) $\frac{1}{4}x^4 \log(4x) - \frac{x^4}{16}$, C) $\frac{4}{5}x^5 \log(4x) - \frac{4x^5}{25}$, D) $\frac{1}{5}x^5 \log(x) - \frac{x^5}{25}$, E) $\frac{1}{5}x^5 \log(4x) - \frac{x^5}{25}$

(7) Mennyi $\int x^4 \sin(5x^5)\,dx$?

      A) $-\frac{1}{25}\cos\left(5x^5\right)$
      B) 13.2
      C) $-\frac{1}{20}\cos\left(5x^4\right)$
      D) $-\frac{1}{5}\cos\left(x^5\right)$
      E) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x)$

(8) Mennyi $\int \frac{2}{2^2 + 4^2 x} + \sin(4x) + e^{-3x}\,dx$?

      A) $-\frac{e^{-3x}}{3} - \frac{1}{4}\cos(4x) + \frac{1}{8}\tan^{-1}(2x)$
      B) $-e^{-3x} - \frac{1}{4}\cos(4x) + \frac{1}{4}\tan^{-1}(2x)$
      C) $-\frac{e^{-3x}}{3} + \frac{1}{4}\cos(4x) + \frac{1}{4}\tan^{-1}(2x)$
      D) $-\frac{e^{-3x}}{3} - \frac{1}{4}\sin(4x) + \tan^{-1}(2x)$
      E) $-\frac{e^{-3x}}{3} - \frac{1}{4}\cos(4x) + \frac{1}{4}\tan^{-1}(2x)$

(9) Keresd meg az $f(x) = x^2 - 10x + 15$ es az $g(x) = 2x + 3$ fuggvenyek altal bezart teruletet!

      A) $\frac{5}{3}$, B) $\frac{32}{3}$, C) $\frac{26}{3}$, D) $\frac{29}{3}$, E) $\frac{8}{3}$

(10) Mennyi $\int \frac{5x+4}{1+9x^2}\,dx$?

      A) $\frac{7}{2}\log(-4(3x+1)) - \frac{17}{2}\log(4(3x-1))$
      B) $\frac{5}{2}\log\left(9x^2 + 1\right) + 12\tan^{-1}(3x)$
      C) $\frac{5}{18}\log\left(9x^2 + 1\right) + \frac{4}{3}\tan^{-1}(3x)$
      D) $\frac{7}{18}\log(-4(3x+1)) - \frac{17}{18}\log(4(3x-1))$
      E) $\frac{5}{18}\log\left(9x^2 + 1\right) - \frac{4}{3}\tan^{-1}(3x)$

(11) Mennyi $\int (2 + 2x)\sin(4x)\,dx$?

      A) $\frac{1}{8}\sin(4x) - \frac{1}{2}x\cos(4x) - \frac{1}{2}\cos(4x)$
      B) $-\frac{1}{8}\sin(4x) + \frac{1}{2}x\cos(4x) - \frac{1}{2}\cos(4x)$
      C) $\frac{1}{32}\sin(4x) - \frac{1}{8}x\cos(4x) - \frac{1}{8}\cos(4x)$
      D) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x) - \frac{1}{2}\cos(4x)$
      E) $\frac{1}{2}x\sin(4x) - \frac{3}{8}\cos(4x)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.16. No.16.

(1) Mennyi $\int x^2 \cos(3x^3)\, dx$?

   A) $\frac{1}{6}x\sin(3x) + \frac{1}{18}\cos(3x)$, B) $\frac{1}{3}x\sin(3x) + \frac{1}{9}\cos(3x)$, C) $\frac{2\sin(x^3)}{3}$, D) $\frac{1}{6}\sin(3x^2)$, E) $\frac{1}{9}\sin(3x^3)$

(2) Mennyi $\int_{-3}^{0} f(x)\, dx$, ha $f(x) = \begin{cases} 2+4x & \text{if } x < 0 \\ 5 & \text{if } x > 0. \end{cases}$?

   A) 11, B) 14, C) 13, D) 15, E) 10

(3) $y' = 4x^2 + 5x + 3$, $y(1) = 5$. Mennyi $y(10)$?

   A) $\frac{3209}{2}$, B) $\frac{3223}{2}$, C) $\frac{3211}{2}$, D) $\frac{3203}{2}$, E) $\frac{3205}{2}$

(4) Mennyi $\int x^5 \sin(2x^6)\, dx$?

   A) $-\frac{1}{12}\cos(2x^6)$
   B) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x)$
   C) $-\frac{1}{6}\cos(x^6)$
   D) 13.2
   E) $-\frac{1}{10}\cos(2x^5)$

(5) Mennyi $\int_{-1}^{6} f(x)\, dx$, ha $f(x) = \begin{cases} 5 & \text{if } x < 0 \\ 4+5x & \text{if } x > 0. \end{cases}$?

   A) 117, B) 119, C) 115, D) 116, E) 114

(6) Mennyi $\int (3+4x)\sin(5x)\, dx$?

   A) $\frac{4}{5}x\sin(5x) - \frac{11}{25}\cos(5x)$
   B) $-\frac{4}{25}\sin(5x) + \frac{4}{5}x\cos(5x) - \frac{3}{5}\cos(5x)$
   C) $\frac{4}{125}\sin(5x) - \frac{4}{25}x\cos(5x) - \frac{3}{25}\cos(5x)$
   D) $\frac{4}{25}\sin(5x) - \frac{4}{5}x\cos(5x) - \frac{3}{5}\cos(5x)$
   E) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \frac{3}{5}\cos(5x)$

(7) Keresd meg az $f(x) = x^2 - 14x + 36$ es az $g(x) = 2x + 1$ fuggvenyek altal bezart teruletet!

   A) $\frac{1}{3}$, B) $\frac{8}{3}$, C) $\frac{5}{3}$, D) $\frac{4}{3}$, E) $\frac{2}{3}$

(8) Mennyi $\int \frac{5}{5^2+4^2x} + \sin(4x) + e^{-3x}\, dx$?

   A) $-\frac{e^{-3x}}{3} - \frac{1}{4}\cos(4x) + \frac{5}{16}\tan^{-1}\left(\frac{4x}{5}\right)$
   B) $-\frac{e^{-3x}}{3} - \frac{1}{4}\sin(4x) + \tan^{-1}\left(\frac{4x}{5}\right)$
   C) $-\frac{e^{-3x}}{3} - \frac{1}{4}\cos(4x) + \frac{1}{4}\tan^{-1}\left(\frac{4x}{5}\right)$
   D) $-e^{-3x} - \frac{1}{4}\cos(4x) + \frac{1}{4}\tan^{-1}\left(\frac{4x}{5}\right)$
   E) $-\frac{e^{-3x}}{3} + \frac{1}{4}\cos(4x) + \frac{1}{4}\tan^{-1}\left(\frac{4x}{5}\right)$

(9) Mennyi $\int \frac{2x+5}{1+9x^2}\, dx$?

   A) $\frac{1}{9}\log\left(9x^2+1\right) + \frac{5}{3}\tan^{-1}(3x)$
   B) $\log\left(9x^2+1\right) + 15\tan^{-1}(3x)$
   C) $\frac{13}{18}\log(-5(3x+1)) - \frac{17}{18}\log(5(3x-1))$
   D) $\frac{1}{9}\log\left(9x^2+1\right) - \frac{5}{3}\tan^{-1}(3x)$
   E) $\frac{13}{2}\log(-5(3x+1)) - \frac{17}{2}\log(5(3x-1))$

(10) Mennyi $\int x^4 \log(5x)\, dx$?

   A) $\frac{1}{6}x^6\log(5x) - \frac{x^6}{36}$, B) $\frac{1}{5}x^5\log(5x) - \frac{x^5}{25}$, C) $x^5\log(5x) - \frac{x^5}{5}$, D) $\frac{1}{4}x^4\log(5x) - \frac{x^4}{16}$, E) $\frac{1}{5}x^5\log(x) - \frac{x^5}{25}$

(11) Mennyi $\int \frac{1}{x^2} + \frac{1}{5x^5} + \sqrt[3]{(3x)^3}\, dx$?

   A) $\frac{1}{12500x^4} + \frac{3x^2}{2} + \frac{1}{x}$, B) $-\frac{1}{20x^4} + \frac{3x^2}{2} - \frac{1}{x}$, C) $-\frac{1}{2500x^4} + \frac{3x^2}{2} - \frac{1}{x}$, D) $-\frac{1}{12500x^4} + \frac{9x^2}{2} - \frac{1}{x}$, E) $-\frac{1}{12500x^4} + \frac{3x^2}{2} - \frac{1}{3x}$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.17. **No.17.**

(1) Mennyi $\int_{-1}^{6} f(x)\,dx$, ha $f(x) = \begin{cases} 5+3x & \text{if } x < 0 \\ 5 & \text{if } x > 0. \end{cases}$?

   A) 88, B) 89, C) 85, D) 86, E) 84

(2) Mennyi $\int x^2 \sin(4x^3)\,dx$?
   A) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x)$
   B) $-\frac{1}{12}\cos\left(4x^3\right)$
   C) $-\frac{1}{8}\cos\left(4x^2\right)$
   D) 13.2
   E) $-\frac{1}{3}\cos\left(x^3\right)$

(3) Mennyi $\int x^2 \cos(5x^3)\,dx$?

   A) $\frac{1}{10}\sin\left(5x^2\right)$, B) $\frac{1}{10}x\sin(5x) + \frac{1}{50}\cos(5x)$, C) $\frac{1}{5}x\sin(5x) + \frac{1}{25}\cos(5x)$, D) $\frac{1}{15}\sin\left(5x^3\right)$, E) $\frac{2\sin\left(x^3\right)}{3}$

(4) Mennyi $\int \frac{3x+3}{1+1x^2}\,dx$?
   A) $\frac{3}{2}\log\left(x^2+1\right) - 3\tan^{-1}(x)$
   B) $-3\log(x-1)$
   C) $\frac{3}{2}\log\left(x^2+1\right) + 3\tan^{-1}(x)$
   D) 17.3
   E) 13.2

(5) $y' = 5x^2 + 2x + 4$, $y(5) = 5$. Mennyi $y(10)$?
   A) $\frac{4663}{3}$, B) $\frac{4675}{3}$, C) $\frac{4648}{3}$, D) $\frac{4651}{3}$, E) $\frac{4660}{3}$

(6) Mennyi $\int x^4 \log(5x)\,dx$?
   A) $\frac{1}{5}x^5\log(5x) - \frac{x^5}{25}$, B) $\frac{1}{6}x^6\log(5x) - \frac{x^6}{36}$, C) $\frac{1}{5}x^5\log(x) - \frac{x^5}{25}$, D) $\frac{1}{4}x^4\log(5x) - \frac{x^4}{16}$, E) $x^5\log(5x) - \frac{x^5}{5}$

(7) Mennyi $\int (5+4x)\sin(3x)\,dx$?
   A) $-\frac{4}{9}\sin(3x) + \frac{4}{3}x\cos(3x) - \frac{5}{3}\cos(3x)$
   B) $\frac{4}{3}x\sin(3x) - \frac{11}{9}\cos(3x)$
   C) $\frac{4}{9}\sin(3x) - \frac{4}{3}x\cos(3x) - \frac{5}{3}\cos(3x)$
   D) $\frac{4}{27}\sin(3x) - \frac{4}{9}x\cos(3x) - \frac{5}{9}\cos(3x)$
   E) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x) - \frac{5}{3}\cos(3x)$

(8) Mennyi $\int_{-3}^{1} f(x)\,dx$, ha $f(x) = \begin{cases} 2 & \text{if } x < 0 \\ 2+1x & \text{if } x > 0. \end{cases}$?
   A) $\frac{9}{2}$, B) $\frac{13}{2}$, C) $\frac{7}{2}$, D) $\frac{15}{2}$, E) $\frac{17}{2}$

(9) Mennyi $\int \frac{1}{x^5} + \frac{1}{3x^4} + \sqrt[3]{(5x)^3}\,dx$?
   A) $-\frac{1}{4x^4} - \frac{1}{9x^3} + \frac{5x^2}{2}$, B) $\frac{1}{4x^4} + \frac{1}{243x^3} + \frac{5x^2}{2}$, C) $-\frac{1}{4x^4} - \frac{1}{81x^3} + \frac{5x^2}{2}$, D) $-\frac{1}{6x^4} - \frac{1}{243x^3} + \frac{5x^2}{2}$, E) $-\frac{1}{4x^4} - \frac{1}{243x^3} + \frac{25x^2}{2}$

(10) Keresd meg az $f(x) = x^2 - 14x + 35$ es az $g(x) = 2x + 3$ fuggvenyek altal bezart teruletet!
   A) $\frac{20}{3}$, B) $\frac{2}{3}$, C) $\frac{23}{3}$, D) $\frac{14}{3}$, E) $\frac{32}{3}$

(11) Mennyi $\int \frac{2}{2^2+3^2 x} + \sin(5x) + e^{-3x}\,dx$?
   A) $-\frac{e^{-3x}}{3} + \frac{1}{5}\cos(5x) + \frac{1}{3}\tan^{-1}\left(\frac{3x}{2}\right)$
   B) $-\frac{e^{-3x}}{3} - \frac{1}{5}\cos(5x) + \frac{2}{9}\tan^{-1}\left(\frac{3x}{2}\right)$
   C) $-\frac{e^{-3x}}{3} - \frac{1}{5}\sin(5x) + \tan^{-1}\left(\frac{3x}{2}\right)$
   D) $-\frac{e^{-3x}}{3} - \frac{1}{5}\cos(5x) + \frac{1}{3}\tan^{-1}\left(\frac{3x}{2}\right)$
   E) $-e^{-3x} - \frac{1}{5}\cos(5x) + \frac{1}{3}\tan^{-1}\left(\frac{3x}{2}\right)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.18. **No.18.**

(1) Mennyi $\int x^3 \log(4x)\,dx$?

   A) $\frac{1}{4}x^4 \log(x) - \frac{x^4}{16}$, B) $\frac{1}{4}x^4 \log(4x) - \frac{x^4}{16}$, C) $\frac{1}{5}x^5 \log(4x) - \frac{x^5}{25}$, D) $\frac{1}{3}x^3 \log(4x) - \frac{x^3}{9}$, E) $x^4 \log(4x) - \frac{x^4}{4}$

(2) Mennyi $\int_{-3}^{-1} f(x)\,dx$, ha $f(x) = \begin{cases} 4 + 5x & \text{if } x < 0 \\ 3 & \text{if } x > 0. \end{cases}$?

   A) 1, B) 2, C) 6, D) 3, E) 4

(3) Mennyi $\int_{-2}^{4} f(x)\,dx$, ha $f(x) = \begin{cases} 5 & \text{if } x < 0 \\ 4 + 2x & \text{if } x > 0. \end{cases}$?

   A) 37, B) 42, C) 38, D) 43, E) 40

(4) Mennyi $\int \frac{3x+4}{1+1x^2}\,dx$?

   A) $\frac{1}{2}\log(-4(x+1)) - \frac{7}{2}\log(4(x-1))$
   B) $\frac{3}{2}\log\left(x^2 + 1\right) - 4\tan^{-1}(x)$
   C) 17.3
   D) $\frac{3}{2}\log\left(x^2 + 1\right) + 4\tan^{-1}(x)$
   E) 13.2

(5) Mennyi $\int \frac{4}{3^2+2^2 x} + \sin(2x) + e^{-3x}\,dx$?

   A) $-\frac{e^{-3x}}{3} - \frac{1}{2}\cos(2x) + \frac{2}{3}\tan^{-1}\left(\frac{2x}{3}\right)$
   B) $-\frac{e^{-3x}}{3} + \frac{1}{2}\cos(2x) + \frac{2}{3}\tan^{-1}\left(\frac{2x}{3}\right)$
   C) $-\frac{e^{-3x}}{3} - \frac{1}{2}\sin(2x) + \frac{4}{3}\tan^{-1}\left(\frac{2x}{3}\right)$
   D) $-\frac{e^{-3x}}{3} - \frac{1}{2}\cos(2x) + \tan^{-1}\left(\frac{2x}{3}\right)$
   E) $-e^{-3x} - \frac{1}{2}\cos(2x) + \frac{2}{3}\tan^{-1}\left(\frac{2x}{3}\right)$

(6) Mennyi $\int x^5 \cos(4x^6)\,dx$?

   A) $\frac{1}{20}\sin\left(4x^5\right)$, B) $\frac{1}{20}x\sin(4x) + \frac{1}{80}\cos(4x)$, C) $\frac{5\sin\left(x^6\right)}{6}$, D) $\frac{1}{24}\sin\left(4x^6\right)$, E) $\frac{1}{4}x\sin(4x) + \frac{1}{16}\cos(4x)$

(7) Keresd meg az $f(x) = x^2 - 15x + 38$ es az $g(x) = 2x + 2$ fuggvenyek altal bezart teruletet!

   A) $\frac{77}{6}$, B) $\frac{101}{6}$, C) $\frac{125}{6}$, D) $\frac{83}{6}$, E) $\frac{113}{6}$

(8) Mennyi $\int \frac{1}{x^3} + \frac{1}{4x^2} + \sqrt[5]{(5x)^2}\,dx$?

   A) 13.2, B) $\frac{5}{7}5^{2/5}x^{7/5} - \frac{1}{4x^2} - \frac{1}{16x}$, C) $\frac{5}{7}5^{2/5}x^{7/5} - \frac{1}{2x^2} - \frac{1}{4x}$, D) $\frac{25}{7}5^{2/5}x^{7/5} - \frac{1}{2x^2} - \frac{1}{16x}$, E) $\frac{5}{7}5^{2/5}x^{7/5} + \frac{1}{2x^2} + \frac{1}{16x}$

(9) Mennyi $\int x^5 \sin(5x^6)\,dx$?

   A) $-\frac{1}{25}\cos\left(5x^5\right)$
   B) 13.2
   C) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x)$
   D) $-\frac{1}{6}\cos\left(x^6\right)$
   E) $-\frac{1}{30}\cos\left(5x^6\right)$

(10) $y' = 5x^2 + 1x + 5$, $y(5) = 3$. Mennyi $y(10)$?

   A) $\frac{9125}{6}$, B) $\frac{9119}{6}$, C) $\frac{9095}{6}$, D) $\frac{9101}{6}$, E) $\frac{9143}{6}$

(11) Mennyi $\int (4 + 4x)\sin(3x)\,dx$?

   A) $\frac{4}{9}\sin(3x) - \frac{4}{3}x\cos(3x) - \frac{4}{3}\cos(3x)$
   B) $-\frac{4}{9}\sin(3x) + \frac{4}{3}x\cos(3x) - \frac{4}{3}\cos(3x)$
   C) $\frac{4}{3}x\sin(3x) - \frac{8}{9}\cos(3x)$
   D) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x) - \frac{4}{3}\cos(3x)$
   E) $\frac{4}{27}\sin(3x) - \frac{4}{9}x\cos(3x) - \frac{4}{9}\cos(3x)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.19. **No.19.**

(1) Mennyi $\int \frac{3}{3^2+5^2x} + \sin(5x) + e^{-3x}\,dx$?

A) $-e^{-3x} - \frac{1}{5}\cos(5x) + \frac{1}{5}\tan^{-1}\left(\frac{5x}{3}\right)$

B) $-\frac{e^{-3x}}{3} - \frac{1}{5}\cos(5x) + \frac{3}{25}\tan^{-1}\left(\frac{5x}{3}\right)$

C) $-\frac{e^{-3x}}{3} - \frac{1}{5}\cos(5x) + \frac{1}{5}\tan^{-1}\left(\frac{5x}{3}\right)$

D) $-\frac{e^{-3x}}{3} - \frac{1}{5}\sin(5x) + \tan^{-1}\left(\frac{5x}{3}\right)$

E) $-\frac{e^{-3x}}{3} + \frac{1}{5}\cos(5x) + \frac{1}{5}\tan^{-1}\left(\frac{5x}{3}\right)$

(2) Keresd meg az $f(x) = x^2 - 14x + 33$ es az $g(x) = 3x + 5$ fuggvenyek altal bezart teruletet!

A) $\frac{1}{2}$, B) $\frac{5}{2}$, C) $\frac{7}{2}$, D) $\frac{9}{2}$, E) $\frac{3}{2}$

(3) Mennyi $\int \frac{1}{x^3} + \frac{1}{3x^5} + \sqrt[3]{(2x)^4}\,dx$?

A) $\frac{6}{7}\sqrt[3]{2}x^{7/3} - \frac{1}{972x^4} - \frac{1}{4x^2}$, B) $\frac{6}{7}\sqrt[3]{2}x^{7/3} - \frac{1}{324x^4} - \frac{1}{2x^2}$, C) $\frac{6}{7}\sqrt[3]{2}x^{7/3} - \frac{1}{12x^4} - \frac{1}{2x^2}$, D) $\frac{6}{7}\sqrt[3]{2}x^{7/3} + \frac{1}{972x^4} + \frac{1}{2x^2}$, E) $\frac{12}{7}\sqrt[3]{2}x^{7/3} - \frac{1}{972x^4} - \frac{1}{2x^2}$

(4) $y' = 3x^2 + 1x + 3$, $y(4) = 2$. Mennyi $y(10)$?

A) 988, B) 990, C) 994, D) 989, E) 998

(5) Mennyi $\int x^3 \sin(2x^4)\,dx$?

A) 13.2

B) $-\frac{1}{4}\cos\left(x^4\right)$

C) $-\frac{1}{8}\cos\left(2x^4\right)$

D) $-\frac{1}{6}\cos\left(2x^3\right)$

E) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x)$

(6) Mennyi $\int_{-4}^{3} f(x)\,dx$, ha $f(x) = \begin{cases} 1 + 1x & \text{if } x < 0 \\ 1 & \text{if } x > 0. \end{cases}$?

A) $\frac{17}{2}$, B) $\frac{15}{2}$, C) $\frac{23}{2}$, D) $\frac{13}{2}$, E) $\frac{19}{2}$

(7) Mennyi $\int (2 + 4x) \sin(4x)\,dx$?

A) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x) - \frac{1}{8}\cos(4x)$

B) $-\frac{1}{4}\sin(4x) + x\cos(4x) - \frac{1}{2}\cos(4x)$

C) $\frac{1}{4}\sin(4x) - x\cos(4x) - \frac{1}{2}\cos(4x)$

D) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x) - \frac{1}{2}\cos(4x)$

E) $x\sin(4x) - \frac{1}{4}\cos(4x)$

(8) Mennyi $\int x^4 \cos(2x^5)\,dx$?

A) $\frac{1}{8}\sin\left(2x^4\right)$, B) $\frac{1}{2}x\sin(2x) + \frac{1}{4}\cos(2x)$, C) $\frac{1}{8}x\sin(2x) + \frac{1}{16}\cos(2x)$, D) $\frac{1}{10}\sin\left(2x^5\right)$, E) $\frac{4\sin\left(x^5\right)}{5}$

(9) Mennyi $\int \frac{2x+2}{1+1x^2}\,dx$?

A) $\log\left(x^2 + 1\right) - 2\tan^{-1}(x)$

B) 17.3

C) 13.2

D) $-2\log(x - 1)$

E) $\log\left(x^2 + 1\right) + 2\tan^{-1}(x)$

(10) Mennyi $\int x^5 \log(3x)\,dx$?

A) $\frac{1}{5}x^5\log(3x) - \frac{x^5}{25}$, B) $\frac{1}{6}x^6\log(3x) - \frac{x^6}{36}$, C) $\frac{1}{7}x^7\log(3x) - \frac{x^7}{49}$, D) $\frac{1}{6}x^6\log(x) - \frac{x^6}{36}$, E) $\frac{1}{2}x^6\log(3x) - \frac{x^6}{12}$

(11) Mennyi $\int_{-2}^{-1} f(x)\,dx$, ha $f(x) = \begin{cases} 1 & \text{if } x < 0 \\ 4 + 4x & \text{if } x > 0. \end{cases}$?

A) -3, B) -2, C) -1, D) -4, E) 1

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.20. **No.20.**

(1) Mennyi $\int \frac{4}{3^2+2^2x} + \sin(5x) + e^{-3x}\,dx$?

     A) $-\frac{e^{-3x}}{3} - \frac{1}{5}\sin(5x) + \frac{4}{3}\tan^{-1}\left(\frac{2x}{3}\right)$

     B) $-\frac{e^{-3x}}{3} + \frac{1}{5}\cos(5x) + \frac{2}{3}\tan^{-1}\left(\frac{2x}{3}\right)$

     C) $-\frac{e^{-3x}}{3} - \frac{1}{5}\cos(5x) + \frac{2}{3}\tan^{-1}\left(\frac{2x}{3}\right)$

     D) $-\frac{e^{-3x}}{3} - \frac{1}{5}\cos(5x) + \tan^{-1}\left(\frac{2x}{3}\right)$

     E) $-e^{-3x} - \frac{1}{5}\cos(5x) + \frac{2}{3}\tan^{-1}\left(\frac{2x}{3}\right)$

(2) Mennyi $\int x^2 \log(5x)\,dx$?

     A) $\frac{5}{3}x^3\log(5x) - \frac{5x^3}{9}$, B) $\frac{1}{2}x^2\log(5x) - \frac{x^2}{4}$, C) $\frac{1}{4}x^4\log(5x) - \frac{x^4}{16}$, D) $\frac{1}{3}x^3\log(5x) - \frac{x^3}{9}$, E) $\frac{1}{3}x^3\log(x) - \frac{x^3}{9}$

(3) Mennyi $\int x^5 \cos(4x^6)\,dx$?

     A) $\frac{1}{24}\sin\left(4x^6\right)$, B) $\frac{1}{20}x\sin(4x) + \frac{1}{80}\cos(4x)$, C) $\frac{1}{4}x\sin(4x) + \frac{1}{16}\cos(4x)$, D) $\frac{5\sin\left(x^6\right)}{6}$, E) $\frac{1}{20}\sin\left(4x^5\right)$

(4) Mennyi $\int x^2 \sin(5x^3)\,dx$?

     A) $-\frac{1}{15}\cos\left(5x^3\right)$

     B) $-\frac{1}{3}\cos\left(x^3\right)$

     C) 13.2

     D) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x)$

     E) $-\frac{1}{10}\cos\left(5x^2\right)$

(5) Keresd meg az $f(x) = x^2 - 12x + 27$ es az $g(x) = 2x + 3$ fuggvenyek altal bezart teruletet!

     A) $\frac{2}{3}$, B) $\frac{7}{3}$, C) $\frac{1}{3}$, D) $\frac{4}{3}$, E) $\frac{13}{3}$

(6) Mennyi $\int_{-4}^{2} f(x)\,dx$, ha $f(x) = \begin{cases} 4 & \text{if } x < 0 \\ 4 + 2x & \text{if } x > 0. \end{cases}$?

     A) 28, B) 23, C) 25, D) 24, E) 26

(7) Mennyi $\int \frac{2x+2}{1+1x^2}\,dx$?

     A) $-2\log(x-1)$

     B) $\log\left(x^2+1\right) - 2\tan^{-1}(x)$

     C) 13.2

     D) $\log\left(x^2+1\right) + 2\tan^{-1}(x)$

     E) 17.3

(8) $y' = 4x^2 + 1x + 3$, $y(2) = 5$. Mennyi $y(10)$?

     A) $\frac{4199}{3}$, B) $\frac{4184}{3}$, C) $\frac{4202}{3}$, D) $\frac{4196}{3}$, E) $\frac{4175}{3}$

(9) Mennyi $\int_{-2}^{1} f(x)\,dx$, ha $f(x) = \begin{cases} 4 + 3x & \text{if } x < 0 \\ 5 & \text{if } x > 0. \end{cases}$?

     A) $\frac{23}{2}$, B) $\frac{31}{2}$, C) $\frac{21}{2}$, D) $\frac{29}{2}$, E) $\frac{27}{2}$

(10) Mennyi $\int \frac{1}{x^3} + \frac{1}{3x^3} + \sqrt[5]{(4x)^4}\,dx$?

     A) $\frac{40}{9}2^{3/5}x^{9/5} - \frac{14}{27x^2}$, B) $\frac{10}{9}2^{3/5}x^{9/5} - \frac{2}{3x^2}$, C) $\frac{10}{9}2^{3/5}x^{9/5} - \frac{29}{108x^2}$, D) $\frac{10}{9}2^{3/5}x^{9/5} + \frac{14}{27x^2}$, E) $\frac{10}{9}2^{3/5}x^{9/5} - \frac{5}{9x^2}$

(11) Mennyi $\int (2 + 3x)\sin(2x)\,dx$?

     A) $\frac{3}{2}x\sin(2x) - \frac{1}{4}\cos(2x)$

     B) $\frac{3}{8}\sin(2x) - \cos^2(x) - \frac{3}{4}x\cos(2x)$

     C) $-\frac{3}{4}\sin(2x) + \frac{3}{2}x\cos(2x) - \cos(2x)$

     D) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x) - \cos(2x)$

     E) $\frac{3}{4}\sin(2x) - \frac{3}{2}x\cos(2x) - \cos(2x)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.21. **No.21.**

(1) Mennyi $\int_{-4}^{-2} f(x)\,dx$, ha $f(x) = \begin{cases} 4 & \text{if } x < 0 \\ 4 + 4x & \text{if } x > 0. \end{cases}$?

A) 7, B) 8, C) 3, D) 6, E) 4

(2) Mennyi $\int (5 + 5x)\sin(5x)\,dx$?

A) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \cos(5x)$
B) $x\sin(5x) - \frac{4}{5}\cos(5x)$
C) $-\frac{1}{5}\sin(5x) + x\cos(5x) - \cos(5x)$
D) $\frac{1}{5}\sin(5x) - x\cos(5x) - \cos(5x)$
E) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \frac{1}{5}\cos(5x)$

(3) Mennyi $\int x^4 \sin(4x^5)\,dx$?

A) $-\frac{1}{5}\cos\left(x^5\right)$
B) $-\frac{1}{20}\cos\left(4x^5\right)$
C) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x)$
D) $-\frac{1}{16}\cos\left(4x^4\right)$
E) 13.2

(4) Mennyi $\int \frac{2}{5^2 + 2^2 x} + \sin(2x) + e^{-2x}\,dx$?

A) $-\frac{e^{-2x}}{2} - \frac{1}{2}\cos(2x) + \frac{1}{5}\tan^{-1}\left(\frac{2x}{5}\right)$
B) $-\frac{e^{-2x}}{2} + \frac{1}{2}\cos(2x) + \frac{1}{5}\tan^{-1}\left(\frac{2x}{5}\right)$
C) $-\frac{e^{-2x}}{2} - \frac{1}{2}\sin(2x) + \frac{2}{5}\tan^{-1}\left(\frac{2x}{5}\right)$
D) $-\frac{e^{-2x}}{2} - \frac{1}{2}\cos(2x) + \frac{1}{2}\tan^{-1}\left(\frac{2x}{5}\right)$
E) $-e^{-2x} - \frac{1}{2}\cos(2x) + \frac{1}{5}\tan^{-1}\left(\frac{2x}{5}\right)$

(5) Mennyi $\int \frac{1}{x^2} + \frac{1}{5x^2} + \sqrt[5]{(4x)^3}\,dx$?

A) $\frac{5x^{8/5}}{2 \cdot 2^{4/5}} - \frac{6}{5x}$, B) $5\sqrt[5]{2}x^{8/5} - \frac{26}{25x}$, C) $\frac{5x^{8/5}}{2 \cdot 2^{4/5}} + \frac{26}{25x}$, D) $\frac{5x^{8/5}}{2 \cdot 2^{4/5}} - \frac{28}{75x}$, E) 13.2

(6) Keresd meg az $f(x) = x^2 - 14x + 34$ es az $g(x) = 3x + 4$ fuggvenyek altal bezart teruletet!

A) $\frac{11}{6}$, B) $\frac{19}{6}$, C) $\frac{1}{6}$, D) $\frac{7}{6}$, E) $\frac{23}{6}$

(7) Mennyi $\int x^2 \log(3x)\,dx$?

A) $\frac{1}{4}x^4\log(3x) - \frac{x^4}{16}$, B) $x^3\log(3x) - \frac{x^3}{3}$, C) $\frac{1}{3}x^3\log(x) - \frac{x^3}{9}$, D) $\frac{1}{3}x^3\log(3x) - \frac{x^3}{9}$, E) $\frac{1}{2}x^2\log(3x) - \frac{x^2}{4}$

(8) Mennyi $\int \frac{3x+5}{1+1x^2}\,dx$?

A) $\frac{3}{2}\log\left(x^2 + 1\right) + 5\tan^{-1}(x)$
B) 13.2
C) $\log(-5(x+1)) - 4\log(5(x-1))$
D) $\frac{3}{2}\log\left(x^2 + 1\right) - 5\tan^{-1}(x)$
E) 17.3

(9) Mennyi $\int x^4 \cos(2x^5)\,dx$?

A) $\frac{1}{8}\sin\left(2x^4\right)$, B) $\frac{1}{10}\sin\left(2x^5\right)$, C) $\frac{1}{8}x\sin(2x) + \frac{1}{16}\cos(2x)$, D) $\frac{4\sin\left(x^5\right)}{5}$, E) $\frac{1}{2}x\sin(2x) + \frac{1}{4}\cos(2x)$

(10) Mennyi $\int_{-1}^{0} f(x)\,dx$, ha $f(x) = \begin{cases} 1 + 5x & \text{if } x < 0 \\ 5 & \text{if } x > 0. \end{cases}$?

A) 3, B) 2, C) 5, D) 0, E) 4

(11) $y' = 4x^2 + 4x + 5$, $y(5) = 3$. Mennyi $y(10)$?

A) $\frac{4010}{3}$, B) $\frac{4019}{3}$, C) $\frac{4007}{3}$, D) $\frac{4016}{3}$, E) $\frac{4034}{3}$

1^2:　　　, 2^2:　　　, 3^2:　　　, 4^2:　　　, 5^2:　　　, 6^2:　　　, 7^2:　　　, 8^2:　　　, 9^2:　　　, 10^2:　　　, 11^2:　　　　　,

0.22. No.22.

(1) Mennyi $\int \frac{3x+4}{1+4x^2}\,dx$?

    A) $\frac{3}{8}\log\left(4x^2+1\right) - 2\tan^{-1}(2x)$

    B) $\frac{5}{2}\log(-4(2x+1)) - \frac{11}{2}\log(4(2x-1))$

    C) $\frac{3}{2}\log\left(4x^2+1\right) + 8\tan^{-1}(2x)$

    D) $\frac{5}{8}\log(-4(2x+1)) - \frac{11}{8}\log(4(2x-1))$

    E) $\frac{3}{8}\log\left(4x^2+1\right) + 2\tan^{-1}(2x)$

(2) Mennyi $\int \frac{5}{2^2+4^2x} + \sin(4x) + e^{-4x}\,dx$?

    A) $-\frac{e^{-4x}}{4} - \frac{1}{4}\cos(4x) + \frac{5}{8}\tan^{-1}(2x)$

    B) $-\frac{e^{-4x}}{4} + \frac{1}{4}\cos(4x) + \frac{5}{8}\tan^{-1}(2x)$

    C) $-\frac{e^{-4x}}{4} - \frac{1}{4}\sin(4x) + \frac{5}{2}\tan^{-1}(2x)$

    D) $-\frac{e^{-4x}}{4} - \frac{1}{4}\cos(4x) + \frac{5}{16}\tan^{-1}(2x)$

    E) $-e^{-4x} - \frac{1}{4}\cos(4x) + \frac{5}{8}\tan^{-1}(2x)$

(3) Mennyi $\int x^5 \log(5x)\,dx$?

    A) $\frac{1}{5}x^5\log(5x) - \frac{x^5}{25}$, B) $\frac{1}{6}x^6\log(5x) - \frac{x^6}{36}$, C) $\frac{1}{6}x^6\log(x) - \frac{x^6}{36}$, D) $\frac{1}{7}x^7\log(5x) - \frac{x^7}{49}$, E) $\frac{5}{6}x^6\log(5x) - \frac{5x^6}{36}$

(4) Keresd meg az $f(x) = x^2 - 13x + 37$ es az $g(x) = 1x + 5$ fuggvenyek altal bezart teruletet!

    A) $\frac{2}{3}$, B) $\frac{32}{3}$, C) $\frac{8}{3}$, D) $\frac{17}{3}$, E) $\frac{11}{3}$

(5) Mennyi $\int x^3 \cos(4x^4)\,dx$?

    A) $\frac{1}{12}x\sin(4x) + \frac{1}{48}\cos(4x)$, B) $\frac{1}{4}x\sin(4x) + \frac{1}{16}\cos(4x)$, C) $\frac{1}{12}\sin\left(4x^3\right)$, D) $\frac{3\sin\left(x^4\right)}{4}$, E) $\frac{1}{16}\sin\left(4x^4\right)$

(6) Mennyi $\int \frac{1}{x^3} + \frac{1}{3x^3} + \sqrt[5]{(4x)^4}\,dx$?

    A) $\frac{10}{9}2^{3/5}x^{9/5} - \frac{2}{3x^2}$, B) $\frac{10}{9}2^{3/5}x^{9/5} - \frac{5}{9x^2}$, C) $\frac{10}{9}2^{3/5}x^{9/5} + \frac{14}{27x^2}$, D) $\frac{40}{9}2^{3/5}x^{9/5} - \frac{14}{27x^2}$, E) $\frac{10}{9}2^{3/5}x^{9/5} - \frac{29}{108x^2}$

(7) $y' = 3x^2 + 3x + 3$, $y(1) = 3$. Mennyi $y(10)$?

    A) $\frac{2339}{2}$, B) $\frac{2337}{2}$, C) $\frac{2343}{2}$, D) $\frac{2335}{2}$, E) $\frac{2355}{2}$

(8) Mennyi $\int (3+2x)\sin(4x)\,dx$?

    A) $\frac{1}{32}\sin(4x) - \frac{1}{8}x\cos(4x) - \frac{3}{16}\cos(4x)$

    B) $\frac{1}{2}x\sin(4x) - \frac{5}{8}\cos(4x)$

    C) $\frac{1}{8}\sin(4x) - \frac{1}{2}x\cos(4x) - \frac{3}{4}\cos(4x)$

    D) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x) - \frac{3}{4}\cos(4x)$

    E) $-\frac{1}{8}\sin(4x) + \frac{1}{2}x\cos(4x) - \frac{3}{4}\cos(4x)$

(9) Mennyi $\int x^3 \sin(2x^4)\,dx$?

    A) $-\frac{1}{6}\cos\left(2x^3\right)$

    B) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x)$

    C) 13.2

    D) $-\frac{1}{4}\cos\left(x^4\right)$

    E) $-\frac{1}{8}\cos\left(2x^4\right)$

(10) Mennyi $\int_{-2}^{1} f(x)\,dx$, ha $f(x) = \begin{cases} 5 & \text{if } x < 0 \\ 3+1x & \text{if } x > 0. \end{cases}$?

    A) $\frac{17}{2}$, B) $\frac{23}{2}$, C) $\frac{27}{2}$, D) $\frac{21}{2}$, E) $\frac{19}{2}$

(11) Mennyi $\int_{-1}^{1} f(x)\,dx$, ha $f(x) = \begin{cases} 5+2x & \text{if } x < 0 \\ 5 & \text{if } x > 0. \end{cases}$?

    A) 7, B) 10, C) 8, D) 6, E) 11

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.23. **No.23.**

(1) $y' = 5x^2 + 5x + 4$, $y(2) = 4$. Mennyi $y(10)$?

   A) $\frac{5758}{3}$, B) $\frac{5773}{3}$, C) $\frac{5767}{3}$, D) $\frac{5764}{3}$, E) $\frac{5788}{3}$

(2) Mennyi $\int (3 + 2x)\sin(5x)\,dx$?

   A) $-\frac{2}{25}\sin(5x) + \frac{2}{5}x\cos(5x) - \frac{3}{5}\cos(5x)$
   B) $\frac{2}{125}\sin(5x) - \frac{2}{25}x\cos(5x) - \frac{3}{25}\cos(5x)$
   C) $\frac{2}{25}\sin(5x) - \frac{2}{5}x\cos(5x) - \frac{3}{5}\cos(5x)$
   D) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \frac{3}{5}\cos(5x)$
   E) $\frac{2}{5}x\sin(5x) - \frac{13}{25}\cos(5x)$

(3) Mennyi $\int_{-1}^{3} f(x)\,dx$, ha $f(x) = \begin{cases} 4 & \text{if } x < 0 \\ 2 + 3x & \text{if } x > 0. \end{cases}$?

   A) $\frac{49}{2}$, B) $\frac{43}{2}$, C) $\frac{37}{2}$, D) $\frac{41}{2}$, E) $\frac{47}{2}$

(4) Mennyi $\int \frac{1}{x^2} + \frac{1}{3x^4} + \sqrt[5]{(3x)^4}\,dx$?

   A) $\frac{5x^{9/5}}{3\sqrt[5]{3}} - \frac{1}{243x^3} - \frac{1}{3x}$, B) $\frac{5x^{9/5}}{3\sqrt[5]{3}} + \frac{1}{243x^3} + \frac{1}{x}$, C) $\frac{5x^{9/5}}{3\sqrt[5]{3}} - \frac{1}{9x^3} - \frac{1}{x}$, D) $\frac{5x^{9/5}}{3\sqrt[5]{3}} - \frac{1}{81x^3} - \frac{1}{x}$, E) $\frac{5x^{9/5}}{\sqrt[5]{3}} - \frac{1}{243x^3} - \frac{1}{x}$

(5) Mennyi $\int x^4 \cos(5x^5)\,dx$?

   A) $\frac{1}{20}\sin\left(5x^4\right)$, B) $\frac{1}{5}x\sin(5x) + \frac{1}{25}\cos(5x)$, C) $\frac{1}{20}x\sin(5x) + \frac{1}{100}\cos(5x)$, D) $\frac{4\sin\left(x^5\right)}{5}$, E) $\frac{1}{25}\sin\left(5x^5\right)$

(6) Mennyi $\int x^2 \sin(4x^3)\,dx$?

   A) $-\frac{1}{12}\cos\left(4x^3\right)$
   B) 13.2
   C) $-\frac{1}{8}\cos\left(4x^2\right)$
   D) $-\frac{1}{3}\cos\left(x^3\right)$
   E) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x)$

(7) Keresd meg az $f(x) = x^2 - 7x + 5$ es az $g(x) = 4x + 3$ fuggvenyek altal bezart teruletet!

   A) $\frac{1}{6}$, B) $\frac{19}{6}$, C) $\frac{25}{6}$, D) $\frac{17}{6}$, E) $\frac{23}{6}$

(8) Mennyi $\int_{-3}^{-2} f(x)\,dx$, ha $f(x) = \begin{cases} 2 + 2x & \text{if } x < 0 \\ 3 & \text{if } x > 0. \end{cases}$?

   A) 1, B) 0, C) -1, D) 3, E) -2

(9) Mennyi $\int \frac{3x+2}{1+9x^2}\,dx$?

   A) $\frac{1}{6}\log\left(9x^2 + 1\right) + \frac{2}{3}\tan^{-1}(3x)$
   B) $\frac{3}{2}\log(-2(3x+1)) - \frac{9}{2}\log(2(3x-1))$
   C) $\frac{1}{6}\log\left(9x^2 + 1\right) - \frac{2}{3}\tan^{-1}(3x)$
   D) $\frac{1}{6}\log(-2(3x+1)) - \frac{1}{2}\log(2(3x-1))$
   E) $\frac{3}{2}\log\left(9x^2 + 1\right) + 6\tan^{-1}(3x)$

(10) Mennyi $\int x^4 \log(2x)\,dx$?

   A) $\frac{2}{5}x^5\log(2x) - \frac{2x^5}{25}$, B) $\frac{1}{4}x^4\log(2x) - \frac{x^4}{16}$, C) $\frac{1}{5}x^5\log(x) - \frac{x^5}{25}$, D) $\frac{1}{5}x^5\log(2x) - \frac{x^5}{25}$, E) $\frac{1}{6}x^6\log(2x) - \frac{x^6}{36}$

(11) Mennyi $\int \frac{4}{2^2+3^2x} + \sin(4x) + e^{-2x}\,dx$?

   A) $-\frac{e^{-2x}}{2} + \frac{1}{4}\cos(4x) + \frac{2}{3}\tan^{-1}\left(\frac{3x}{2}\right)$
   B) $-\frac{e^{-2x}}{2} - \frac{1}{4}\cos(4x) + \frac{2}{3}\tan^{-1}\left(\frac{3x}{2}\right)$
   C) $-\frac{e^{-2x}}{2} - \frac{1}{4}\sin(4x) + 2\tan^{-1}\left(\frac{3x}{2}\right)$
   D) $-\frac{e^{-2x}}{2} - \frac{1}{4}\cos(4x) + \frac{4}{9}\tan^{-1}\left(\frac{3x}{2}\right)$
   E) $-e^{-2x} - \frac{1}{4}\cos(4x) + \frac{2}{3}\tan^{-1}\left(\frac{3x}{2}\right)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.24. **No.24.**

(1) Mennyi $\int x^4 \cos(4x^5)\,dx$?

A) $\frac{1}{4}x\sin(4x) + \frac{1}{16}\cos(4x)$, B) $\frac{4\sin(x^5)}{5}$, C) $\frac{1}{16}\sin(4x^4)$, D) $\frac{1}{20}\sin(4x^5)$, E) $\frac{1}{16}x\sin(4x) + \frac{1}{64}\cos(4x)$

(2) Keresd meg az $f(x) = x^2 - 18x + 53$ es az $g(x) = 3x + 3$ fuggvenyek altal bezart teruletet!

A) $\frac{71}{6}$, B) $\frac{125}{6}$, C) $\frac{77}{6}$, D) $\frac{65}{6}$, E) $\frac{89}{6}$

(3) Mennyi $\int x^5 \sin(2x^6)\,dx$?

A) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x)$

B) 13.2

C) $-\frac{1}{12}\cos\left(2x^6\right)$

D) $-\frac{1}{6}\cos\left(x^6\right)$

E) $-\frac{1}{10}\cos\left(2x^5\right)$

(4) $y' = 2x^2 + 2x + 2$, $y(3) = 3$. Mennyi $y(10)$?

A) $\frac{2261}{3}$, B) $\frac{2273}{3}$, C) $\frac{2270}{3}$, D) $\frac{2240}{3}$, E) $\frac{2264}{3}$

(5) Mennyi $\int \frac{4}{4^2 + 2^2 x} + \sin(5x) + e^{-2x}\,dx$?

A) $-\frac{e^{-2x}}{2} + \frac{1}{5}\cos(5x) + \frac{1}{2}\tan^{-1}\left(\frac{x}{2}\right)$

B) $-e^{-2x} - \frac{1}{5}\cos(5x) + \frac{1}{2}\tan^{-1}\left(\frac{x}{2}\right)$

C) $-\frac{e^{-2x}}{2} - \frac{1}{5}\cos(5x) + \tan^{-1}\left(\frac{x}{2}\right)$

D) $-\frac{e^{-2x}}{2} - \frac{1}{5}\sin(5x) + \tan^{-1}\left(\frac{x}{2}\right)$

E) $-\frac{e^{-2x}}{2} - \frac{1}{5}\cos(5x) + \frac{1}{2}\tan^{-1}\left(\frac{x}{2}\right)$

(6) Mennyi $\int_{-2}^{1} f(x)\,dx$, ha $f(x) = \begin{cases} 3 + 2x & \text{if } x < 0 \\ 5 & \text{if } x > 0. \end{cases}$?

A) 14, B) 10, C) 12, D) 9, E) 11

(7) Mennyi $\int \frac{3x+4}{1+4x^2}\,dx$?

A) $\frac{5}{2}\log(-4(2x+1)) - \frac{11}{2}\log(4(2x-1))$

B) $\frac{5}{8}\log(-4(2x+1)) - \frac{11}{8}\log(4(2x-1))$

C) $\frac{3}{8}\log\left(4x^2+1\right) + 2\tan^{-1}(2x)$

D) $\frac{3}{2}\log\left(4x^2+1\right) + 8\tan^{-1}(2x)$

E) $\frac{3}{8}\log\left(4x^2+1\right) - 2\tan^{-1}(2x)$

(8) Mennyi $\int (2+4x)\sin(4x)\,dx$?

A) $-\frac{1}{4}\sin(4x) + x\cos(4x) - \frac{1}{2}\cos(4x)$

B) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x) - \frac{1}{8}\cos(4x)$

C) $\frac{1}{4}\sin(4x) - x\cos(4x) - \frac{1}{2}\cos(4x)$

D) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x) - \frac{1}{2}\cos(4x)$

E) $x\sin(4x) - \frac{1}{4}\cos(4x)$

(9) Mennyi $\int_{-3}^{0} f(x)\,dx$, ha $f(x) = \begin{cases} 2 & \text{if } x < 0 \\ 4 + 5x & \text{if } x > 0. \end{cases}$?

A) 2, B) 1, C) 5, D) 3, E) 6

(10) Mennyi $\int x^4 \log(3x)\,dx$?

A) $\frac{3}{5}x^5\log(3x) - \frac{3x^5}{25}$, B) $\frac{1}{4}x^4\log(3x) - \frac{x^4}{16}$, C) $\frac{1}{5}x^5\log(x) - \frac{x^5}{25}$, D) $\frac{1}{5}x^5\log(3x) - \frac{x^5}{25}$, E) $\frac{1}{6}x^6\log(3x) - \frac{x^6}{36}$

(11) Mennyi $\int \frac{1}{x^4} + \frac{1}{2x^5} + \sqrt[2]{(3x)^4}\,dx$?

A) $\frac{1}{128x^4} + 3x^3 + \frac{1}{3x^3}$, B) $-\frac{1}{8x^4} + 3x^3 - \frac{1}{3x^3}$, C) $-\frac{1}{128x^4} + 9x^3 - \frac{1}{3x^3}$, D) $-\frac{1}{128x^4} + 3x^3 - \frac{1}{5x^3}$, E) $-\frac{1}{64x^4} + 3x^3 - \frac{1}{3x^3}$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.25. **No.25.**

(1) Mennyi $\int x^4 \log(2x)\,dx$?

A) $\frac{2}{5}x^5 \log(2x) - \frac{2x^5}{25}$, B) $\frac{1}{5}x^5 \log(x) - \frac{x^5}{25}$, C) $\frac{1}{5}x^5 \log(2x) - \frac{x^5}{25}$, D) $\frac{1}{6}x^6 \log(2x) - \frac{x^6}{36}$, E) $\frac{1}{4}x^4 \log(2x) - \frac{x^4}{16}$

(2) Keresd meg az $f(x) = x^2 - 12x + 27$ es az $g(x) = 1x + 3$ fuggvenyek altal bezart teruletet!

A) $\frac{77}{6}$, B) $\frac{95}{6}$, C) $\frac{125}{6}$, D) $\frac{71}{6}$, E) $\frac{83}{6}$

(3) Mennyi $\int_{-1}^{2} f(x)\,dx$, ha $f(x) = \begin{cases} 5 & \text{if } x < 0 \\ 5 + 5x & \text{if } x > 0. \end{cases}$?

A) 25, B) 22, C) 23, D) 20, E) 21

(4) Mennyi $\int \frac{5}{4^2 + 4^2 x} + \sin(2x) + e^{-5x}\,dx$?

A) $-\frac{e^{-5x}}{5} - \frac{1}{2}\cos(2x) + \frac{5}{16}\tan^{-1}(x)$
B) $-\frac{e^{-5x}}{5} - \frac{1}{2}\sin(2x) + \frac{5}{4}\tan^{-1}(x)$
C) 13.2
D) $-e^{-5x} - \frac{1}{2}\cos(2x) + \frac{5}{16}\tan^{-1}(x)$
E) $-\frac{e^{-5x}}{5} + \frac{1}{2}\cos(2x) + \frac{5}{16}\tan^{-1}(x)$

(5) Mennyi $\int (4 + 2x)\sin(5x)\,dx$?

A) $\frac{2}{25}\sin(5x) - \frac{2}{5}x\cos(5x) - \frac{4}{5}\cos(5x)$
B) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \frac{4}{5}\cos(5x)$
C) $-\frac{2}{25}\sin(5x) + \frac{2}{5}x\cos(5x) - \frac{4}{5}\cos(5x)$
D) $\frac{2}{125}\sin(5x) - \frac{2}{25}x\cos(5x) - \frac{4}{25}\cos(5x)$
E) $\frac{2}{5}x\sin(5x) - \frac{18}{25}\cos(5x)$

(6) Mennyi $\int \frac{1}{x^3} + \frac{1}{4x^3} + \sqrt[2]{(2x)^4}\,dx$?

A) $\frac{4x^3}{3} - \frac{33}{128x^2}$, B) $\frac{8x^3}{3} - \frac{65}{128x^2}$, C) $\frac{4x^3}{3} - \frac{17}{32x^2}$, D) $\frac{4x^3}{3} - \frac{5}{8x^2}$, E) $\frac{4x^3}{3} + \frac{65}{128x^2}$

(7) Mennyi $\int x^4 \sin(3x^5)\,dx$?

A) 13.2
B) $-\frac{1}{5}\cos\left(x^5\right)$
C) $-\frac{1}{12}\cos\left(3x^4\right)$
D) $-\frac{1}{15}\cos\left(3x^5\right)$
E) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x)$

(8) $y' = 5x^2 + 4x + 2$, $y(5) = 1$. Mennyi $y(10)$?

A) $\frac{4837}{3}$, B) $\frac{4846}{3}$, C) $\frac{4828}{3}$, D) $\frac{4858}{3}$, E) $\frac{4840}{3}$

(9) Mennyi $\int x^2 \cos(2x^3)\,dx$?

A) $\frac{1}{4}\sin\left(2x^2\right)$, B) $\frac{2\sin\left(x^3\right)}{3}$, C) $\frac{1}{2}x\sin(2x) + \frac{1}{4}\cos(2x)$, D) $\frac{1}{6}\sin\left(2x^3\right)$, E) $\frac{1}{4}x\sin(2x) + \frac{1}{8}\cos(2x)$

(10) Mennyi $\int \frac{4x+5}{1+4x^2}\,dx$?

A) $\frac{1}{2}\log\left(4x^2 + 1\right) - \frac{5}{2}\tan^{-1}(2x)$
B) $2\log\left(4x^2 + 1\right) + 10\tan^{-1}(2x)$
C) $\frac{1}{2}\log\left(4x^2 + 1\right) + \frac{5}{2}\tan^{-1}(2x)$
D) $\frac{3}{4}\log(-5(2x + 1)) - \frac{7}{4}\log(5(2x - 1))$
E) $3\log(-5(2x + 1)) - 7\log(5(2x - 1))$

(11) Mennyi $\int_{-4}^{-3} f(x)\,dx$, ha $f(x) = \begin{cases} 4 + 5x & \text{if } x < 0 \\ 5 & \text{if } x > 0. \end{cases}$?

A) 4, B) 2, C) 0, D) 1, E) 5

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.26. **No.26.**

(1) Mennyi $\int_{-4}^{-1} f(x)\,dx$, ha $f(x) = \begin{cases} 3+4x & \text{if } x < 0 \\ 5 & \text{if } x > 0. \end{cases}$?

    A) 14, B) 10, C) 13, D) 11, E) 15

(2) Mennyi $\int x^4 \sin(3x^5)\,dx$?

    A) 13.2
    B) $-\frac{1}{12}\cos\left(3x^4\right)$
    C) $-\frac{1}{15}\cos\left(3x^5\right)$
    D) $-\frac{1}{5}\cos\left(x^5\right)$
    E) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x)$

(3) Keresd meg az $f(x) = x^2 - 7x + 3$ es az $g(x) = 4x + 1$ fuggvenyek altal bezart teruletet!

    A) $\frac{23}{6}$, B) $\frac{1}{6}$, C) $\frac{5}{6}$, D) $\frac{7}{6}$, E) $\frac{17}{6}$

(4) Mennyi $\int \frac{4}{5^2+5^2x} + \sin(5x) + e^{-5x}\,dx$?

    A) $-\frac{e^{-5x}}{5} - \frac{1}{5}\cos(5x) + \frac{4}{25}\tan^{-1}(x)$
    B) $-\frac{e^{-5x}}{5} + \frac{1}{5}\cos(5x) + \frac{4}{25}\tan^{-1}(x)$
    C) 13.2
    D) $-e^{-5x} - \frac{1}{5}\cos(5x) + \frac{4}{25}\tan^{-1}(x)$
    E) $-\frac{e^{-5x}}{5} - \frac{1}{5}\sin(5x) + \frac{4}{5}\tan^{-1}(x)$

(5) Mennyi $\int \frac{4x+4}{1+9x^2}\,dx$?

    A) $\frac{2}{9}\log\left(9x^2+1\right) + \frac{4}{3}\tan^{-1}(3x)$
    B) $4\log(3x+1) - 8\log(1-3x)$
    C) $\frac{4}{9}\log(-4(3x+1)) - \frac{8}{9}\log(4(3x-1))$
    D) $\frac{2}{9}\log\left(9x^2+1\right) - \frac{4}{3}\tan^{-1}(3x)$
    E) $2\log\left(9x^2+1\right) + 12\tan^{-1}(3x)$

(6) Mennyi $\int (4+4x)\sin(3x)\,dx$?

    A) $-\frac{4}{9}\sin(3x) + \frac{4}{3}x\cos(3x) - \frac{4}{3}\cos(3x)$
    B) $\frac{4}{3}x\sin(3x) - \frac{8}{9}\cos(3x)$
    C) $\frac{4}{9}\sin(3x) - \frac{4}{3}x\cos(3x) - \frac{4}{3}\cos(3x)$
    D) $\frac{4}{27}\sin(3x) - \frac{4}{9}x\cos(3x) - \frac{4}{9}\cos(3x)$
    E) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x) - \frac{4}{3}\cos(3x)$

(7) $y' = 3x^2 + 3x + 5$, $y(1) = 1$. Mennyi $y(10)$?

    A) $\frac{2379}{2}$, B) $\frac{2387}{2}$, C) $\frac{2369}{2}$, D) $\frac{2375}{2}$, E) $\frac{2383}{2}$

(8) Mennyi $\int x^3 \cos(2x^4)\,dx$?

    A) $\frac{1}{8}\sin\left(2x^4\right)$, B) $\frac{3\sin\left(x^4\right)}{4}$, C) $\frac{1}{2}x\sin(2x) + \frac{1}{4}\cos(2x)$, D) $\frac{1}{6}x\sin(2x) + \frac{1}{12}\cos(2x)$, E) $\frac{1}{6}\sin\left(2x^3\right)$

(9) Mennyi $\int \frac{1}{x^5} + \frac{1}{2x^5} + \sqrt[4]{(2x)^2}\,dx$?

    A) $\frac{4}{3}\sqrt{2}x^{3/2} - \frac{33}{128x^4}$, B) $\frac{2}{3}\sqrt{2}x^{3/2} - \frac{67}{384x^4}$, C) $\frac{2}{3}\sqrt{2}x^{3/2} - \frac{17}{64x^4}$, D) $\frac{2}{3}\sqrt{2}x^{3/2} - \frac{3}{8x^4}$, E) $\frac{2}{3}\sqrt{2}x^{3/2} + \frac{33}{128x^4}$

(10) Mennyi $\int x^2 \log(5x)\,dx$?

    A) $\frac{1}{4}x^4\log(5x) - \frac{x^4}{16}$, B) $\frac{5}{3}x^3\log(5x) - \frac{5x^3}{9}$, C) $\frac{1}{2}x^2\log(5x) - \frac{x^2}{4}$, D) $\frac{1}{3}x^3\log(5x) - \frac{x^3}{9}$, E) $\frac{1}{3}x^3\log(x) - \frac{x^3}{9}$

(11) Mennyi $\int_{-3}^{0} f(x)\,dx$, ha $f(x) = \begin{cases} 4 & \text{if } x < 0 \\ 3+2x & \text{if } x > 0. \end{cases}$?

    A) 12, B) 9, C) 7, D) 10, E) 8

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.27. **No.27.**

(1) Mennyi $\int x^3 \sin(5x^4)\, dx$?

    A) $-\frac{1}{4}\cos\left(x^4\right)$
    B) 13.2
    C) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x)$
    D) $-\frac{1}{20}\cos\left(5x^4\right)$
    E) $-\frac{1}{15}\cos\left(5x^3\right)$

(2) Mennyi $\int_{-2}^{7} f(x)\, dx$, ha $f(x) = \begin{cases} 3 + 1x & \text{if } x < 0 \\ 2 & \text{if } x > 0. \end{cases}$?

    A) $\frac{99}{2}$, B) $\frac{97}{2}$, C) $\frac{93}{2}$, D) $\frac{91}{2}$, E) $\frac{95}{2}$

(3) Mennyi $\int \frac{5}{3^2 + 5^2 x} + \sin(4x) + e^{-2x}\, dx$?

    A) $-\frac{e^{-2x}}{2} - \frac{1}{4}\cos(4x) + \frac{1}{5}\tan^{-1}\left(\frac{5x}{3}\right)$
    B) $-\frac{e^{-2x}}{2} - \frac{1}{4}\cos(4x) + \frac{1}{3}\tan^{-1}\left(\frac{5x}{3}\right)$
    C) $-\frac{e^{-2x}}{2} - \frac{1}{4}\sin(4x) + \frac{5}{3}\tan^{-1}\left(\frac{5x}{3}\right)$
    D) $-e^{-2x} - \frac{1}{4}\cos(4x) + \frac{1}{3}\tan^{-1}\left(\frac{5x}{3}\right)$
    E) $-\frac{e^{-2x}}{2} + \frac{1}{4}\cos(4x) + \frac{1}{3}\tan^{-1}\left(\frac{5x}{3}\right)$

(4) Mennyi $\int \frac{2x+3}{1+1x^2}\, dx$?

    A) 13.2
    B) $\frac{1}{2}\log(-3(x+1)) - \frac{5}{2}\log(3(x-1))$
    C) $\log\left(x^2 + 1\right) + 3\tan^{-1}(x)$
    D) 17.3
    E) $\log\left(x^2 + 1\right) - 3\tan^{-1}(x)$

(5) Mennyi $\int (5 + 5x)\sin(2x)\, dx$?

    A) $\frac{5}{8}\sin(2x) - \frac{5}{2}\cos^2(x) - \frac{5}{4}x\cos(2x)$
    B) $\frac{5}{4}\sin(2x) - \frac{5}{2}x\cos(2x) - \frac{5}{2}\cos(2x)$
    C) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x) - \frac{5}{2}\cos(2x)$
    D) $\frac{5}{2}x\sin(2x) - \frac{5}{4}\cos(2x)$
    E) $-\frac{5}{4}\sin(2x) + \frac{5}{2}x\cos(2x) - \frac{5}{2}\cos(2x)$

(6) Mennyi $\int \frac{1}{x^3} + \frac{1}{4x^2} + \sqrt[4]{(2x)^4}\, dx$?

    A) $x^2 - \frac{1}{4x^2} - \frac{1}{16x}$, B) $2x^2 - \frac{1}{2x^2} - \frac{1}{16x}$, C) $x^2 + \frac{1}{2x^2} + \frac{1}{16x}$, D) $x^2 - \frac{1}{2x^2} - \frac{1}{4x}$, E) 13.2

(7) Mennyi $\int_{-1}^{2} f(x)\, dx$, ha $f(x) = \begin{cases} 1 & \text{if } x < 0 \\ 1 + 3x & \text{if } x > 0. \end{cases}$?

    A) 8, B) 4, C) 9, D) 6, E) 5

(8) Keresd meg az $f(x) = x^2 - 15x + 34$ es az $g(x) = 4x + 4$ fuggvenyek altal bezart teruletet!

    A) $\frac{17}{6}$, B) $\frac{13}{6}$, C) $\frac{1}{6}$, D) $\frac{5}{6}$, E) $\frac{11}{6}$

(9) $y' = 2x^2 + 3x + 2$, $y(1) = 3$. Mennyi $y(10)$?

    A) $\frac{1655}{2}$, B) $\frac{1671}{2}$, C) $\frac{1657}{2}$, D) $\frac{1651}{2}$, E) $\frac{1653}{2}$

(10) Mennyi $\int x^2 \cos(4x^3)\, dx$?

    A) $\frac{1}{8}x\sin(4x) + \frac{1}{32}\cos(4x)$, B) $\frac{2\sin\left(x^3\right)}{3}$, C) $\frac{1}{8}\sin\left(4x^2\right)$, D) $\frac{1}{4}x\sin(4x) + \frac{1}{16}\cos(4x)$, E) $\frac{1}{12}\sin\left(4x^3\right)$

(11) Mennyi $\int x^3 \log(5x)\, dx$?

    A) $\frac{1}{4}x^4\log(x) - \frac{x^4}{16}$, B) $\frac{1}{4}x^4\log(5x) - \frac{x^4}{16}$, C) $\frac{5}{4}x^4\log(5x) - \frac{5x^4}{16}$, D) $\frac{1}{3}x^3\log(5x) - \frac{x^3}{9}$, E) $\frac{1}{5}x^5\log(5x) - \frac{x^5}{25}$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.28. **No.28.**

(1) Mennyi $\int_{-4}^{4} f(x)\,dx$, ha $f(x) = \begin{cases} 1+3x & \text{if } x < 0 \\ 3 & \text{if } x > 0. \end{cases}$?

　　　A) 35, B) 40, C) 39, D) 37, E) 38

(2) Mennyi $\int_{-3}^{-2} f(x)\,dx$, ha $f(x) = \begin{cases} 1 & \text{if } x < 0 \\ 5+4x & \text{if } x > 0. \end{cases}$?

　　　A) 2, B) 0, C) 1, D) -3, E) -1

(3) Mennyi $\int x^3 \cos(3x^4)\,dx$?

　　　A) $\frac{1}{9}\sin\left(3x^3\right)$, B) $\frac{1}{3}x\sin(3x) + \frac{1}{9}\cos(3x)$, C) $\frac{1}{12}\sin\left(3x^4\right)$, D) $\frac{1}{9}x\sin(3x) + \frac{1}{27}\cos(3x)$, E) $\frac{3\sin\left(x^4\right)}{4}$

(4) Mennyi $\int \frac{1}{x^3} + \frac{1}{2x^2} + \sqrt[2]{(5x)^3}\,dx$?

　　　A) $10\sqrt{5}x^{5/2} - \frac{1}{2x^2} - \frac{1}{4x}$, B) $2\sqrt{5}x^{5/2} + \frac{1}{2x^2} + \frac{1}{4x}$, C) 13.2, D) $2\sqrt{5}x^{5/2} - \frac{1}{4x^2} - \frac{1}{4x}$, E) $2\sqrt{5}x^{5/2} - \frac{1}{2x^2} - \frac{1}{2x}$

(5) Mennyi $\int x^4 \log(5x)\,dx$?

　　　A) $\frac{1}{5}x^5 \log(x) - \frac{x^5}{25}$, B) $\frac{1}{6}x^6 \log(5x) - \frac{x^6}{36}$, C) $\frac{1}{4}x^4 \log(5x) - \frac{x^4}{16}$, D) $\frac{1}{5}x^5 \log(5x) - \frac{x^5}{25}$, E) $x^5 \log(5x) - \frac{x^5}{5}$

(6) Mennyi $\int \frac{2}{5^2 + 2^2 x} + \sin(4x) + e^{-5x}\,dx$?

　　　A) $-\frac{e^{-5x}}{5} - \frac{1}{4}\cos(4x) + \frac{1}{2}\tan^{-1}\left(\frac{2x}{5}\right)$
　　　B) $-e^{-5x} - \frac{1}{4}\cos(4x) + \frac{1}{5}\tan^{-1}\left(\frac{2x}{5}\right)$
　　　C) $-\frac{e^{-5x}}{5} + \frac{1}{4}\cos(4x) + \frac{1}{5}\tan^{-1}\left(\frac{2x}{5}\right)$
　　　D) $-\frac{e^{-5x}}{5} - \frac{1}{4}\sin(4x) + \frac{2}{5}\tan^{-1}\left(\frac{2x}{5}\right)$
　　　E) $-\frac{e^{-5x}}{5} - \frac{1}{4}\cos(4x) + \frac{1}{5}\tan^{-1}\left(\frac{2x}{5}\right)$

(7) Keresd meg az $f(x) = x^2 - 17x + 50$ es az $g(x) = 3x + 5$ fuggvenyek altal bezart teruletet!

　　　A) $\frac{8}{3}$, B) $\frac{32}{3}$, C) $\frac{20}{3}$, D) $\frac{2}{3}$, E) $\frac{5}{3}$

(8) Mennyi $\int x^4 \sin(3x^5)\,dx$?

　　　A) $-\frac{1}{5}\cos\left(x^5\right)$
　　　B) $-\frac{1}{12}\cos\left(3x^4\right)$
　　　C) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x)$
　　　D) 13.2
　　　E) $-\frac{1}{15}\cos\left(3x^5\right)$

(9) $y' = 4x^2 + 5x + 4$, $y(1) = 4$. Mennyi $y(10)$?

　　　A) $\frac{3221}{2}$, B) $\frac{3231}{2}$, C) $\frac{3227}{2}$, D) $\frac{3225}{2}$, E) $\frac{3239}{2}$

(10) Mennyi $\int \frac{3x+5}{1+4x^2}\,dx$?

　　　A) $\frac{3}{2}\log\left(4x^2 + 1\right) + 10\tan^{-1}(2x)$
　　　B) $\frac{7}{2}\log(-5(2x+1)) - \frac{13}{2}\log(5(2x-1))$
　　　C) $\frac{3}{8}\log\left(4x^2 + 1\right) + \frac{5}{2}\tan^{-1}(2x)$
　　　D) $\frac{7}{8}\log(-5(2x+1)) - \frac{13}{8}\log(5(2x-1))$
　　　E) $\frac{3}{8}\log\left(4x^2 + 1\right) - \frac{5}{2}\tan^{-1}(2x)$

(11) Mennyi $\int (3+5x)\sin(4x)\,dx$?

　　　A) $\frac{5}{4}x\sin(4x) - \frac{7}{16}\cos(4x)$
　　　B) $\frac{5}{16}\sin(4x) - \frac{5}{4}x\cos(4x) - \frac{3}{4}\cos(4x)$
　　　C) $\frac{5}{64}\sin(4x) - \frac{5}{16}x\cos(4x) - \frac{3}{16}\cos(4x)$
　　　D) $-\frac{5}{16}\sin(4x) + \frac{5}{4}x\cos(4x) - \frac{3}{4}\cos(4x)$
　　　E) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x) - \frac{3}{4}\cos(4x)$

1^2:　　　, 2^2:　　　, 3^2:　　　, 4^2:　　　, 5^2:　　　, 6^2:　　　, 7^2:　　　, 8^2:　　　, 9^2:　　　, 10^2:　　　, 11^2:　　　,

0.29. **No.29.**

(1) Mennyi $\int x^2 \sin(5x^3)\, dx$?

     A) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x)$
     B) $-\frac{1}{3}\cos\left(x^3\right)$
     C) 13.2
     D) $-\frac{1}{10}\cos\left(5x^2\right)$
     E) $-\frac{1}{15}\cos\left(5x^3\right)$

(2) Mennyi $\int_{-2}^{4} f(x)\, dx$, ha $f(x) = \begin{cases} 1+1x & \text{if } x < 0 \\ 4 & \text{if } x > 0. \end{cases}$?

     A) 16, B) 15, C) 18, D) 17, E) 20

(3) Mennyi $\int \frac{4x+3}{1+1x^2}\, dx$?

     A) $2\log\left(x^2+1\right) - 3\tan^{-1}(x)$
     B) $2\log\left(x^2+1\right) + 3\tan^{-1}(x)$
     C) 17.3
     D) $-\frac{7}{2}\log(3(x-1)) - \frac{1}{2}\log(-3(x+1))$
     E) 13.2

(4) Mennyi $\int x^4 \log(2x)\, dx$?

     A) $\frac{1}{5}x^5\log(2x) - \frac{x^5}{25}$, B) $\frac{1}{4}x^4\log(2x) - \frac{x^4}{16}$, C) $\frac{1}{6}x^6\log(2x) - \frac{x^6}{36}$, D) $\frac{1}{5}x^5\log(x) - \frac{x^5}{25}$, E) $\frac{2}{5}x^5\log(2x) - \frac{2x^5}{25}$

(5) Keresd meg az $f(x) = x^2 - 17x + 55$ es az $g(x) = 2x + 5$ fuggvenyek altal bezart teruletet!

     A) $\frac{89}{6}$, B) $\frac{95}{6}$, C) $\frac{77}{6}$, D) $\frac{125}{6}$, E) $\frac{65}{6}$

(6) Mennyi $\int (4+5x)\sin(2x)\, dx$?

     A) $-\frac{5}{4}\sin(2x) + \frac{5}{2}x\cos(2x) - 2\cos(2x)$
     B) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x) - 2\cos(2x)$
     C) $\frac{5}{4}\sin(2x) - \frac{5}{2}x\cos(2x) - 2\cos(2x)$
     D) $\frac{5}{2}x\sin(2x) - \frac{3}{4}\cos(2x)$
     E) $\frac{5}{8}\sin(2x) - 2\cos^2(x) - \frac{5}{4}x\cos(2x)$

(7) $y' = 2x^2 + 3x + 2$, $y(1) = 1$. Mennyi $y(10)$?

     A) $\frac{1651}{2}$, B) $\frac{1655}{2}$, C) $\frac{1659}{2}$, D) $\frac{1649}{2}$, E) $\frac{1667}{2}$

(8) Mennyi $\int x^4 \cos(3x^5)\, dx$?

     A) $\frac{4\sin\left(x^5\right)}{5}$, B) $\frac{1}{12}\sin\left(3x^4\right)$, C) $\frac{1}{12}x\sin(3x) + \frac{1}{36}\cos(3x)$, D) $\frac{1}{3}x\sin(3x) + \frac{1}{9}\cos(3x)$, E) $\frac{1}{15}\sin\left(3x^5\right)$

(9) Mennyi $\int_{-1}^{6} f(x)\, dx$, ha $f(x) = \begin{cases} 5 & \text{if } x < 0 \\ 2+2x & \text{if } x > 0. \end{cases}$?

     A) 48, B) 53, C) 52, D) 50, E) 54

(10) Mennyi $\int \frac{1}{x^3} + \frac{1}{3x^4} + \sqrt[2]{(4x)^4}\, dx$?

     A) $\frac{16x^3}{3} - \frac{1}{243x^3} - \frac{1}{4x^2}$, B) $\frac{16x^3}{3} - \frac{1}{9x^3} - \frac{1}{2x^2}$, C) $\frac{16x^3}{3} + \frac{1}{243x^3} + \frac{1}{2x^2}$, D) $\frac{64x^3}{3} - \frac{1}{243x^3} - \frac{1}{2x^2}$, E) $\frac{16x^3}{3} - \frac{1}{81x^3} - \frac{1}{2x^2}$

(11) Mennyi $\int \frac{3}{3^2+4^2x} + \sin(3x) + e^{-5x}\, dx$?

     A) $-\frac{e^{-5x}}{5} + \frac{1}{3}\cos(3x) + \frac{1}{4}\tan^{-1}\left(\frac{4x}{3}\right)$
     B) $-\frac{e^{-5x}}{5} - \frac{1}{3}\cos(3x) + \frac{3}{16}\tan^{-1}\left(\frac{4x}{3}\right)$
     C) $-e^{-5x} - \frac{1}{3}\cos(3x) + \frac{1}{4}\tan^{-1}\left(\frac{4x}{3}\right)$
     D) $-\frac{e^{-5x}}{5} - \frac{1}{3}\sin(3x) + \tan^{-1}\left(\frac{4x}{3}\right)$
     E) $-\frac{e^{-5x}}{5} - \frac{1}{3}\cos(3x) + \frac{1}{4}\tan^{-1}\left(\frac{4x}{3}\right)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.30. **No.30.**

(1) Mennyi $\int \frac{2}{4^2+3^2x} + \sin(2x) + e^{-4x}\,dx$?

　　A) $-\frac{e^{-4x}}{4} - \frac{1}{2}\cos(2x) + \frac{1}{6}\tan^{-1}\left(\frac{3x}{4}\right)$
　　B) $-\frac{e^{-4x}}{4} - \frac{1}{2}\sin(2x) + \frac{1}{2}\tan^{-1}\left(\frac{3x}{4}\right)$
　　C) $-\frac{e^{-4x}}{4} + \frac{1}{2}\cos(2x) + \frac{1}{6}\tan^{-1}\left(\frac{3x}{4}\right)$
　　D) $-\frac{e^{-4x}}{4} - \frac{1}{2}\cos(2x) + \frac{2}{9}\tan^{-1}\left(\frac{3x}{4}\right)$
　　E) $-e^{-4x} - \frac{1}{2}\cos(2x) + \frac{1}{6}\tan^{-1}\left(\frac{3x}{4}\right)$

(2) Keresd meg az $f(x) = x^2 - 16x + 36$ es az $g(x) = 4x + 1$ fuggvenyek altal bezart teruletet!

　　A) $\frac{13}{3}$, B) $\frac{7}{3}$, C) $\frac{4}{3}$, D) $\frac{5}{3}$, E) $\frac{1}{3}$

(3) Mennyi $\int \frac{1}{x^5} + \frac{1}{4x^4} + \sqrt[2]{(2x)^3}\,dx$?

　　A) $\frac{4}{5}\sqrt{2}x^{5/2} - \frac{1}{4x^4} - \frac{1}{12x^3}$, B) $\frac{8}{5}\sqrt{2}x^{5/2} - \frac{1}{4x^4} - \frac{1}{768x^3}$, C) $\frac{4}{5}\sqrt{2}x^{5/2} + \frac{1}{4x^4} + \frac{1}{768x^3}$, D) $\frac{4}{5}\sqrt{2}x^{5/2} - \frac{1}{6x^4} - \frac{1}{768x^3}$, E) $\frac{4}{5}\sqrt{2}x^{5/2} - \frac{1}{4x^4} - \frac{1}{192x^3}$

(4) Mennyi $\int_{-3}^{-2} f(x)\,dx$, ha $f(x) = \begin{cases} 4 + 5x & \text{if } x < 0 \\ 2 & \text{if } x > 0. \end{cases}$?

　　A) -2, B) -3, C) -1, D) 0, E) 2

(5) Mennyi $\int (4 + 5x)\sin(5x)\,dx$?

　　A) $x\sin(5x) - \frac{3}{5}\cos(5x)$
　　B) $\frac{1}{5}\sin(5x) - x\cos(5x) - \frac{4}{5}\cos(5x)$
　　C) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \frac{4}{5}\cos(5x)$
　　D) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \frac{4}{25}\cos(5x)$
　　E) $-\frac{1}{5}\sin(5x) + x\cos(5x) - \frac{4}{5}\cos(5x)$

(6) Mennyi $\int x^3 \sin(4x^4)\,dx$?

　　A) $-\frac{1}{12}\cos\left(4x^3\right)$
　　B) $-\frac{1}{4}\cos\left(x^4\right)$
　　C) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x)$
　　D) $-\frac{1}{16}\cos\left(4x^4\right)$
　　E) 13.2

(7) Mennyi $\int x^2 \log(5x)\,dx$?

　　A) $\frac{5}{3}x^3\log(5x) - \frac{5x^3}{9}$, B) $\frac{1}{3}x^3\log(x) - \frac{x^3}{9}$, C) $\frac{1}{4}x^4\log(5x) - \frac{x^4}{16}$, D) $\frac{1}{3}x^3\log(5x) - \frac{x^3}{9}$, E) $\frac{1}{2}x^2\log(5x) - \frac{x^2}{4}$

(8) Mennyi $\int \frac{3x+2}{1+1x^2}\,dx$?

　　A) $-\frac{5}{2}\log(2(x-1)) - \frac{1}{2}\log(-2(x+1))$
　　B) 13.2
　　C) 17.3
　　D) $\frac{3}{2}\log\left(x^2+1\right) - 2\tan^{-1}(x)$
　　E) $\frac{3}{2}\log\left(x^2+1\right) + 2\tan^{-1}(x)$

(9) $y' = 1x^2 + 5x + 5$, $y(5) = 4$. Mennyi $y(10)$?

　　A) $\frac{3049}{6}$, B) $\frac{2989}{6}$, C) $\frac{3007}{6}$, D) $\frac{3031}{6}$, E) $\frac{3037}{6}$

(10) Mennyi $\int x^5 \cos(5x^6)\,dx$?

　　A) $\frac{1}{5}x\sin(5x) + \frac{1}{25}\cos(5x)$, B) $\frac{1}{25}x\sin(5x) + \frac{1}{125}\cos(5x)$, C) $\frac{1}{25}\sin\left(5x^5\right)$, D) $\frac{1}{30}\sin\left(5x^6\right)$, E) $\frac{5\sin\left(x^6\right)}{6}$

(11) Mennyi $\int_{-3}^{-1} f(x)\,dx$, ha $f(x) = \begin{cases} 1 & \text{if } x < 0 \\ 1 + 3x & \text{if } x > 0. \end{cases}$?

　　A) -2, B) -1, C) -3, D) 3, E) 2

1^2:　　　, 2^2:　　　, 3^2:　　　, 4^2:　　　, 5^2:　　　, 6^2:　　　, 7^2:　　　, 8^2:　　　, 9^2:　　　, 10^2:　　　, 11^2:　　　　,

0.31. **No.31.**

(1) Mennyi $\int \frac{1}{x^4} + \frac{1}{2x^4} + \sqrt[4]{(2x)^3}\,dx$?

A) $\frac{4}{7}2^{3/4}x^{7/4} - \frac{3}{8x^3}$, B) $\frac{4}{7}2^{3/4}x^{7/4} - \frac{53}{240x^3}$, C) $\frac{8}{7}2^{3/4}x^{7/4} - \frac{17}{48x^3}$, D) $\frac{4}{7}2^{3/4}x^{7/4} + \frac{17}{48x^3}$, E) $\frac{4}{7}2^{3/4}x^{7/4} - \frac{1}{2x^3}$

(2) Mennyi $\int \frac{5x+4}{1+1x^2}\,dx$?

A) 13.2
B) $\frac{5}{2}\log\left(x^2+1\right) - 4\tan^{-1}(x)$
C) 17.3
D) $\frac{5}{2}\log\left(x^2+1\right) + 4\tan^{-1}(x)$
E) $-\frac{9}{2}\log(4(x-1)) - \frac{1}{2}\log(-4(x+1))$

(3) Mennyi $\int_{-4}^{3} f(x)\,dx$, ha $f(x) = \begin{cases} 3+1x & \text{if } x < 0 \\ 2 & \text{if } x > 0. \end{cases}$?

A) $\frac{43}{2}$, B) $\frac{35}{2}$, C) $\frac{39}{2}$, D) $\frac{41}{2}$, E) $\frac{45}{2}$

(4) Mennyi $\int (5+5x)\sin(3x)\,dx$?

A) $\frac{5}{27}\sin(3x) - \frac{5}{9}x\cos(3x) - \frac{5}{9}\cos(3x)$
B) $\frac{5}{3}x\sin(3x) - \frac{10}{9}\cos(3x)$
C) $-\frac{5}{9}\sin(3x) + \frac{5}{3}x\cos(3x) - \frac{5}{3}\cos(3x)$
D) $\frac{5}{9}\sin(3x) - \frac{5}{3}x\cos(3x) - \frac{5}{3}\cos(3x)$
E) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x) - \frac{5}{3}\cos(3x)$

(5) Mennyi $\int x^3 \log(2x)\,dx$?

A) $\frac{1}{4}x^4\log(2x) - \frac{x^4}{16}$, B) $\frac{1}{3}x^3\log(2x) - \frac{x^3}{9}$, C) $\frac{1}{5}x^5\log(2x) - \frac{x^5}{25}$, D) $\frac{1}{4}x^4\log(x) - \frac{x^4}{16}$, E) $\frac{1}{2}x^4\log(2x) - \frac{x^4}{8}$

(6) Mennyi $\int_{-1}^{2} f(x)\,dx$, ha $f(x) = \begin{cases} 4 & \text{if } x < 0 \\ 5+1x & \text{if } x > 0. \end{cases}$?

A) 14, B) 11, C) 12, D) 13, E) 16

(7) Mennyi $\int x^5 \cos(5x^6)\,dx$?

A) $\frac{1}{25}\sin\left(5x^5\right)$, B) $\frac{1}{25}x\sin(5x) + \frac{1}{125}\cos(5x)$, C) $\frac{5\sin\left(x^6\right)}{6}$, D) $\frac{1}{30}\sin\left(5x^6\right)$, E) $\frac{1}{5}x\sin(5x) + \frac{1}{25}\cos(5x)$

(8) Mennyi $\int \frac{2}{3^2+5^2x} + \sin(3x) + e^{-2x}\,dx$?

A) $-\frac{e^{-2x}}{2} - \frac{1}{3}\cos(3x) + \frac{2}{25}\tan^{-1}\left(\frac{5x}{3}\right)$
B) $-e^{-2x} - \frac{1}{3}\cos(3x) + \frac{2}{15}\tan^{-1}\left(\frac{5x}{3}\right)$
C) $-\frac{e^{-2x}}{2} - \frac{1}{3}\cos(3x) + \frac{2}{15}\tan^{-1}\left(\frac{5x}{3}\right)$
D) $-\frac{e^{-2x}}{2} + \frac{1}{3}\cos(3x) + \frac{2}{15}\tan^{-1}\left(\frac{5x}{3}\right)$
E) $-\frac{e^{-2x}}{2} - \frac{1}{3}\sin(3x) + \frac{2}{3}\tan^{-1}\left(\frac{5x}{3}\right)$

(9) Keresd meg az $f(x) = x^2 - 12x + 17$ es az $g(x) = 3x + 3$ fuggvenyek altal bezart teruletet!

A) $\frac{65}{6}$, B) $\frac{77}{6}$, C) $\frac{71}{6}$, D) $\frac{125}{6}$, E) $\frac{83}{6}$

(10) $y' = 4x^2 + 3x + 3$, $y(2) = 3$. Mennyi $y(10)$?

A) $\frac{4454}{3}$, B) $\frac{4460}{3}$, C) $\frac{4451}{3}$, D) $\frac{4457}{3}$, E) $\frac{4481}{3}$

(11) Mennyi $\int x^5 \sin(5x^6)\,dx$?

A) $-\frac{1}{30}\cos\left(5x^6\right)$
B) $-\frac{1}{25}\cos\left(5x^5\right)$
C) 13.2
D) $-\frac{1}{6}\cos\left(x^6\right)$
E) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.32. **No.32.**

(1) Mennyi $\int_{-1}^{8} f(x)\,dx$, ha $f(x) = \begin{cases} 4+3x & \text{if } x < 0 \\ 3 & \text{if } x > 0. \end{cases}$?

      A) 128, B) 126, C) 127, D) 129, E) 131

(2) Mennyi $\int \frac{3}{3^2+4^2x} + \sin(3x) + e^{-5x}\,dx$?

      A) $-e^{-5x} - \frac{1}{3}\cos(3x) + \frac{1}{4}\tan^{-1}\left(\frac{4x}{3}\right)$
      B) $-\frac{e^{-5x}}{5} - \frac{1}{3}\sin(3x) + \tan^{-1}\left(\frac{4x}{3}\right)$
      C) $-\frac{e^{-5x}}{5} + \frac{1}{3}\cos(3x) + \frac{1}{4}\tan^{-1}\left(\frac{4x}{3}\right)$
      D) $-\frac{e^{-5x}}{5} - \frac{1}{3}\cos(3x) + \frac{3}{16}\tan^{-1}\left(\frac{4x}{3}\right)$
      E) $-\frac{e^{-5x}}{5} - \frac{1}{3}\cos(3x) + \frac{1}{4}\tan^{-1}\left(\frac{4x}{3}\right)$

(3) Mennyi $\int x^3 \sin(5x^4)\,dx$?

      A) $-\frac{1}{20}\cos\left(5x^4\right)$
      B) $-\frac{1}{4}\cos\left(x^4\right)$
      C) 13.2
      D) $-\frac{1}{15}\cos\left(5x^3\right)$
      E) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x)$

(4) Mennyi $\int \frac{3x+2}{1+9x^2}\,dx$?

      A) $\frac{1}{6}\log\left(9x^2+1\right) - \frac{2}{3}\tan^{-1}(3x)$
      B) $\frac{3}{2}\log\left(9x^2+1\right) + 6\tan^{-1}(3x)$
      C) $\frac{1}{6}\log(-2(3x+1)) - \frac{1}{2}\log(2(3x-1))$
      D) $\frac{3}{2}\log(-2(3x+1)) - \frac{9}{2}\log(2(3x-1))$
      E) $\frac{1}{6}\log\left(9x^2+1\right) + \frac{2}{3}\tan^{-1}(3x)$

(5) $y' = 5x^2 + 4x + 3$, $y(4) = 3$. Mennyi $y(10)$?

      A) 1743, B) 1739, C) 1742, D) 1741, E) 1749

(6) Mennyi $\int \frac{1}{x^4} + \frac{1}{3x^4} + \sqrt[5]{(5x)^2}\,dx$?

      A) $\frac{5}{7}5^{2/5}x^{7/5} - \frac{4}{9x^3}$, B) $\frac{5}{7}5^{2/5}x^{7/5} - \frac{28}{81x^3}$, C) $\frac{5}{7}5^{2/5}x^{7/5} + \frac{82}{243x^3}$, D) $\frac{5}{7}5^{2/5}x^{7/5} - \frac{248}{1215x^3}$, E) $\frac{25}{7}5^{2/5}x^{7/5} - \frac{82}{243x^3}$

(7) Mennyi $\int_{-3}^{2} f(x)\,dx$, ha $f(x) = \begin{cases} 3 & \text{if } x < 0 \\ 3+3x & \text{if } x > 0. \end{cases}$?

      A) 17, B) 18, C) 21, D) 20, E) 16

(8) Mennyi $\int x^5 \cos(2x^6)\,dx$?

      A) $\frac{1}{10}x\sin(2x) + \frac{1}{20}\cos(2x)$, B) $\frac{5\sin\left(x^6\right)}{6}$, C) $\frac{1}{2}x\sin(2x) + \frac{1}{4}\cos(2x)$, D) $\frac{1}{12}\sin\left(2x^6\right)$, E) $\frac{1}{10}\sin\left(2x^5\right)$

(9) Keresd meg az $f(x) = x^2 - 10x + 13$ es az $g(x) = 3x + 3$ fuggvenyek altal bezart teruletet!

      A) $\frac{7}{2}$, B) $\frac{9}{2}$, C) $\frac{5}{2}$, D) $\frac{3}{2}$, E) $\frac{11}{2}$

(10) Mennyi $\int x^4 \log(3x)\,dx$?

      A) $\frac{1}{4}x^4 \log(3x) - \frac{x^4}{16}$, B) $\frac{1}{5}x^5 \log(3x) - \frac{x^5}{25}$, C) $\frac{1}{6}x^6 \log(3x) - \frac{x^6}{36}$, D) $\frac{3}{5}x^5 \log(3x) - \frac{3x^5}{25}$, E) $\frac{1}{5}x^5 \log(x) - \frac{x^5}{25}$

(11) Mennyi $\int (4+4x)\sin(5x)\,dx$?

      A) $\frac{4}{25}\sin(5x) - \frac{4}{5}x\cos(5x) - \frac{4}{5}\cos(5x)$
      B) $-\frac{4}{25}\sin(5x) + \frac{4}{5}x\cos(5x) - \frac{4}{5}\cos(5x)$
      C) $\frac{4}{5}x\sin(5x) - \frac{16}{25}\cos(5x)$
      D) $\frac{4}{125}\sin(5x) - \frac{4}{25}x\cos(5x) - \frac{4}{25}\cos(5x)$
      E) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \frac{4}{5}\cos(5x)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.33. No.33.

(1) Mennyi $\int (3+5x)\sin(5x)\,dx$?

     A) $x\sin(5x) - \frac{2}{5}\cos(5x)$
     B) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \frac{3}{5}\cos(5x)$
     C) $-\frac{1}{5}\sin(5x) + x\cos(5x) - \frac{3}{5}\cos(5x)$
     D) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \frac{3}{25}\cos(5x)$
     E) $\frac{1}{5}\sin(5x) - x\cos(5x) - \frac{3}{5}\cos(5x)$

(2) Mennyi $\int_{-2}^{7} f(x)\,dx$, ha $f(x) = \begin{cases} 3+2x & \text{if } x<0 \\ 3 & \text{if } x>0. \end{cases}$?

     A) 76, B) 71, C) 72, D) 73, E) 74

(3) Keresd meg az $f(x) = x^2 - 12x + 12$ es az $g(x) = 5x + 2$ fuggvenyek altal bezart teruletet!

     A) $\frac{5}{2}$, B) $\frac{11}{2}$, C) $\frac{1}{2}$, D) $\frac{3}{2}$, E) $\frac{9}{2}$

(4) Mennyi $\int x^2 \log(5x)\,dx$?

     A) $\frac{5}{3}x^3\log(5x) - \frac{5x^3}{9}$, B) $\frac{1}{3}x^3\log(5x) - \frac{x^3}{9}$, C) $\frac{1}{4}x^4\log(5x) - \frac{x^4}{16}$, D) $\frac{1}{2}x^2\log(5x) - \frac{x^2}{4}$, E) $\frac{1}{3}x^3\log(x) - \frac{x^3}{9}$

(5) Mennyi $\int x^4 \sin(2x^5)\,dx$?

     A) $-\frac{1}{5}\cos\left(x^5\right)$
     B) 13.2
     C) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x)$
     D) $-\frac{1}{8}\cos\left(2x^4\right)$
     E) $-\frac{1}{10}\cos\left(2x^5\right)$

(6) Mennyi $\int_{-4}^{-3} f(x)\,dx$, ha $f(x) = \begin{cases} 1 & \text{if } x<0 \\ 4+3x & \text{if } x>0. \end{cases}$?

     A) -3, B) 1, C) -2, D) -4, E) -1

(7) Mennyi $\int \frac{1}{x^5} + \frac{1}{2x^3} + \sqrt[4]{(3x)^5}\,dx$?

     A) $\frac{4x^{9/4}}{3^{3/4}} + \frac{1}{4x^4} + \frac{1}{16x^2}$, B) $\frac{4x^{9/4}}{3^{3/4}} - \frac{1}{6x^4} - \frac{1}{16x^2}$, C) $\frac{4x^{9/4}}{3^{3/4}} - \frac{1}{4x^4} - \frac{1}{4x^2}$, D) $\frac{4x^{9/4}}{3^{3/4}} - \frac{1}{4x^4} - \frac{1}{8x^2}$, E) $4\sqrt[4]{3}x^{9/4} - \frac{1}{4x^4} - \frac{1}{16x^2}$

(8) Mennyi $\int x^4 \cos(5x^5)\,dx$?

     A) $\frac{1}{25}\sin\left(5x^5\right)$, B) $\frac{1}{5}x\sin(5x) + \frac{1}{25}\cos(5x)$, C) $\frac{4\sin\left(x^5\right)}{5}$, D) $\frac{1}{20}\sin\left(5x^4\right)$, E) $\frac{1}{20}x\sin(5x) + \frac{1}{100}\cos(5x)$

(9) Mennyi $\int \frac{5}{3^2 + 2^2 x} + \sin(3x) + e^{-4x}\,dx$?

     A) $-\frac{e^{-4x}}{4} - \frac{1}{3}\cos(3x) + \frac{5}{4}\tan^{-1}\left(\frac{2x}{3}\right)$
     B) $-\frac{e^{-4x}}{4} + \frac{1}{3}\cos(3x) + \frac{5}{6}\tan^{-1}\left(\frac{2x}{3}\right)$
     C) $-\frac{e^{-4x}}{4} - \frac{1}{3}\cos(3x) + \frac{5}{6}\tan^{-1}\left(\frac{2x}{3}\right)$
     D) $-\frac{e^{-4x}}{4} - \frac{1}{3}\sin(3x) + \frac{5}{3}\tan^{-1}\left(\frac{2x}{3}\right)$
     E) $-e^{-4x} - \frac{1}{3}\cos(3x) + \frac{5}{6}\tan^{-1}\left(\frac{2x}{3}\right)$

(10) $y' = 1x^2 + 4x + 1$, $y(2) = 2$. Mennyi $y(10)$?

     A) $\frac{1574}{3}$, B) $\frac{1571}{3}$, C) $\frac{1568}{3}$, D) $\frac{1577}{3}$, E) $\frac{1598}{3}$

(11) Mennyi $\int \frac{4x+5}{1+9x^2}\,dx$?

     A) $\frac{2}{9}\log\left(9x^2+1\right) - \frac{5}{3}\tan^{-1}(3x)$
     B) $\frac{11}{18}\log(-5(3x+1)) - \frac{19}{18}\log(5(3x-1))$
     C) $2\log\left(9x^2+1\right) + 15\tan^{-1}(3x)$
     D) $\frac{11}{2}\log(-5(3x+1)) - \frac{19}{2}\log(5(3x-1))$
     E) $\frac{2}{9}\log\left(9x^2+1\right) + \frac{5}{3}\tan^{-1}(3x)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.34. **No.34.**

(1) Mennyi $\int \frac{1}{x^4} + \frac{1}{2x^5} + \sqrt[4]{(3x)^5}\,dx$?

   A) $\frac{4x^{9/4}}{3^{3/4}} - \frac{1}{8x^4} - \frac{1}{3x^3}$, B) $\frac{4x^{9/4}}{3^{3/4}} - \frac{1}{128x^4} - \frac{1}{5x^3}$, C) $\frac{4x^{9/4}}{3^{3/4}} + \frac{1}{128x^4} + \frac{1}{3x^3}$, D) $4\sqrt[4]{3}x^{9/4} - \frac{1}{128x^4} - \frac{1}{3x^3}$, E) $\frac{4x^{9/4}}{3^{3/4}} - \frac{1}{64x^4} - \frac{1}{3x^3}$

(2) Mennyi $\int_{-2}^{2} f(x)\,dx$, ha $f(x) = \begin{cases} 4 & \text{if } x < 0 \\ 5 + 3x & \text{if } x > 0. \end{cases}$?

   A) 24, B) 21, C) 23, D) 22, E) 20

(3) Mennyi $\int x^2 \cos(5x^3)\,dx$?

   A) $\frac{2\sin(x^3)}{3}$, B) $\frac{1}{5}x\sin(5x) + \frac{1}{25}\cos(5x)$, C) $\frac{1}{15}\sin(5x^3)$, D) $\frac{1}{10}\sin(5x^2)$, E) $\frac{1}{10}x\sin(5x) + \frac{1}{50}\cos(5x)$

(4) Mennyi $\int \frac{3x+3}{1+1x^2}\,dx$?

   A) $\frac{3}{2}\log(x^2 + 1) + 3\tan^{-1}(x)$
   B) 17.3
   C) 13.2
   D) $-3\log(x - 1)$
   E) $\frac{3}{2}\log(x^2 + 1) - 3\tan^{-1}(x)$

(5) $y' = 4x^2 + 4x + 2$, $y(3) = 1$. Mennyi $y(10)$?

   A) $\frac{4456}{3}$, B) $\frac{4462}{3}$, C) $\frac{4483}{3}$, D) $\frac{4468}{3}$, E) $\frac{4465}{3}$

(6) Mennyi $\int (3 + 3x)\sin(2x)\,dx$?

   A) $\frac{3}{8}\sin(2x) - \frac{3}{2}\cos^2(x) - \frac{3}{4}x\cos(2x)$
   B) $\frac{3}{4}\sin(2x) - \frac{3}{2}x\cos(2x) - \frac{3}{2}\cos(2x)$
   C) $\frac{3}{2}x\sin(2x) - \frac{3}{4}\cos(2x)$
   D) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x) - \frac{3}{2}\cos(2x)$
   E) $-\frac{3}{4}\sin(2x) + \frac{3}{2}x\cos(2x) - \frac{3}{2}\cos(2x)$

(7) Mennyi $\int_{-2}^{1} f(x)\,dx$, ha $f(x) = \begin{cases} 4 + 5x & \text{if } x < 0 \\ 2 & \text{if } x > 0. \end{cases}$?

   A) $\frac{21}{2}$, B) $\frac{17}{2}$, C) $\frac{19}{2}$, D) $\frac{11}{2}$, E) $\frac{15}{2}$

(8) Mennyi $\int x^2 \log(3x)\,dx$?

   A) $\frac{1}{2}x^2\log(3x) - \frac{x^2}{4}$, B) $\frac{1}{4}x^4\log(3x) - \frac{x^4}{16}$, C) $\frac{1}{3}x^3\log(x) - \frac{x^3}{9}$, D) $x^3\log(3x) - \frac{x^3}{3}$, E) $\frac{1}{3}x^3\log(3x) - \frac{x^3}{9}$

(9) Mennyi $\int \frac{5}{5^2 + 2^2x} + \sin(4x) + e^{-5x}\,dx$?

   A) $-\frac{e^{-5x}}{5} - \frac{1}{4}\cos(4x) + \frac{1}{2}\tan^{-1}\left(\frac{2x}{5}\right)$
   B) $-e^{-5x} - \frac{1}{4}\cos(4x) + \frac{1}{2}\tan^{-1}\left(\frac{2x}{5}\right)$
   C) $-\frac{e^{-5x}}{5} - \frac{1}{4}\sin(4x) + \tan^{-1}\left(\frac{2x}{5}\right)$
   D) $-\frac{e^{-5x}}{5} + \frac{1}{4}\cos(4x) + \frac{1}{2}\tan^{-1}\left(\frac{2x}{5}\right)$
   E) $-\frac{e^{-5x}}{5} - \frac{1}{4}\cos(4x) + \frac{5}{4}\tan^{-1}\left(\frac{2x}{5}\right)$

(10) Keresd meg az $f(x) = x^2 - 13x + 16$ es az $g(x) = 5x + 4$ fuggvenyek altal bezart teruletet!

   A) $\frac{14}{3}$, B) $\frac{32}{3}$, C) $\frac{26}{3}$, D) $\frac{38}{3}$, E) $\frac{20}{3}$

(11) Mennyi $\int x^5 \sin(2x^6)\,dx$?

   A) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x)$
   B) $-\frac{1}{10}\cos(2x^5)$
   C) $-\frac{1}{12}\cos(2x^6)$
   D) 13.2
   E) $-\frac{1}{6}\cos(x^6)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.35. **No.35.**

(1) Mennyi $\int (2+5x)\sin(5x)\,dx$?

     A) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \frac{2}{25}\cos(5x)$
     B) $\frac{1}{5}\sin(5x) - x\cos(5x) - \frac{2}{5}\cos(5x)$
     C) $x\sin(5x) - \frac{1}{5}\cos(5x)$
     D) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \frac{2}{5}\cos(5x)$
     E) $-\frac{1}{5}\sin(5x) + x\cos(5x) - \frac{2}{5}\cos(5x)$

(2) Keresd meg az $f(x) = x^2 - 4x + 3$ es az $g(x) = 1x + 1$ fuggvenyek altal bezart teruletet!

     A) $\frac{23}{6}$, B) $\frac{25}{6}$, C) $\frac{11}{6}$, D) $\frac{1}{6}$, E) $\frac{7}{6}$

(3) $y' = 1x^2 + 3x + 3$, $y(1) = 3$. Mennyi $y(10)$?

     A) $\frac{1023}{2}$, B) $\frac{1011}{2}$, C) $\frac{1005}{2}$, D) $\frac{1003}{2}$, E) $\frac{1007}{2}$

(4) Mennyi $\int_{-4}^{2} f(x)\,dx$, ha $f(x) = \begin{cases} 1 & \text{if } x < 0 \\ 2 + 4x & \text{if } x > 0. \end{cases}$?

     A) 13, B) 16, C) 14, D) 11, E) 12

(5) Mennyi $\int \frac{2}{5^2 + 2^2 x} + \sin(5x) + e^{-4x}\,dx$?

     A) $-\frac{e^{-4x}}{4} - \frac{1}{5}\cos(5x) + \frac{1}{5}\tan^{-1}\left(\frac{2x}{5}\right)$
     B) $-\frac{e^{-4x}}{4} - \frac{1}{5}\cos(5x) + \frac{1}{2}\tan^{-1}\left(\frac{2x}{5}\right)$
     C) $-e^{-4x} - \frac{1}{5}\cos(5x) + \frac{1}{5}\tan^{-1}\left(\frac{2x}{5}\right)$
     D) $-\frac{e^{-4x}}{4} + \frac{1}{5}\cos(5x) + \frac{1}{5}\tan^{-1}\left(\frac{2x}{5}\right)$
     E) $-\frac{e^{-4x}}{4} - \frac{1}{5}\sin(5x) + \frac{2}{5}\tan^{-1}\left(\frac{2x}{5}\right)$

(6) Mennyi $\int x^2 \log(3x)\,dx$?

     A) $x^3 \log(3x) - \frac{x^3}{3}$, B) $\frac{1}{3}x^3 \log(x) - \frac{x^3}{9}$, C) $\frac{1}{3}x^3 \log(3x) - \frac{x^3}{9}$, D) $\frac{1}{4}x^4 \log(3x) - \frac{x^4}{16}$, E) $\frac{1}{2}x^2 \log(3x) - \frac{x^2}{4}$

(7) Mennyi $\int \frac{1}{x^4} + \frac{1}{5x^3} + \sqrt[5]{(3x)^4}\,dx$?

     A) $\frac{5x^{9/5}}{3\sqrt[5]{3}} - \frac{1}{5x^3} - \frac{1}{250x^2}$, B) $\frac{5x^{9/5}}{3\sqrt[5]{3}} + \frac{1}{3x^3} + \frac{1}{250x^2}$, C) $\frac{5x^{9/5}}{\sqrt[5]{3}} - \frac{1}{3x^3} - \frac{1}{250x^2}$, D) $\frac{5x^{9/5}}{3\sqrt[5]{3}} - \frac{1}{3x^3} - \frac{1}{10x^2}$, E) $\frac{5x^{9/5}}{3\sqrt[5]{3}} - \frac{1}{3x^3} - \frac{1}{50x^2}$

(8) Mennyi $\int \frac{3x+4}{1+9x^2}\,dx$?

     A) $\frac{1}{6}\log\left(9x^2 + 1\right) + \frac{4}{3}\tan^{-1}(3x)$
     B) $\frac{3}{2}\log\left(9x^2 + 1\right) + 12\tan^{-1}(3x)$
     C) $\frac{1}{2}\log(-4(3x+1)) - \frac{5}{6}\log(4(3x-1))$
     D) $\frac{9}{2}\log(-4(3x+1)) - \frac{15}{2}\log(4(3x-1))$
     E) $\frac{1}{6}\log\left(9x^2 + 1\right) - \frac{4}{3}\tan^{-1}(3x)$

(9) Mennyi $\int x^5 \cos(3x^6)\,dx$?

     A) $\frac{5\sin\left(x^6\right)}{6}$, B) $\frac{1}{18}\sin\left(3x^6\right)$, C) $\frac{1}{3}x\sin(3x) + \frac{1}{9}\cos(3x)$, D) $\frac{1}{15}\sin\left(3x^5\right)$, E) $\frac{1}{15}x\sin(3x) + \frac{1}{45}\cos(3x)$

(10) Mennyi $\int x^4 \sin(4x^5)\,dx$?

     A) $-\frac{1}{5}\cos\left(x^5\right)$
     B) $-\frac{1}{16}\cos\left(4x^4\right)$
     C) 13.2
     D) $-\frac{1}{20}\cos\left(4x^5\right)$
     E) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x)$

(11) Mennyi $\int_{-2}^{2} f(x)\,dx$, ha $f(x) = \begin{cases} 5 + 5x & \text{if } x < 0 \\ 1 & \text{if } x > 0. \end{cases}$?

     A) 18, B) 19, C) 22, D) 20, E) 17

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.36. **No.36.**

(1) Mennyi $\int x^3 \sin(2x^4)\,dx$?

      A) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x)$

      B) $-\frac{1}{8}\cos\left(2x^4\right)$

      C) 13.2

      D) $-\frac{1}{6}\cos\left(2x^3\right)$

      E) $-\frac{1}{4}\cos\left(x^4\right)$

(2) Mennyi $\int \frac{4x+4}{1+9x^2}\,dx$?

      A) $2\log\left(9x^2+1\right) + 12\tan^{-1}(3x)$

      B) $4\log(3x+1) - 8\log(1-3x)$

      C) $\frac{4}{9}\log(-4(3x+1)) - \frac{8}{9}\log(4(3x-1))$

      D) $\frac{2}{9}\log\left(9x^2+1\right) + \frac{4}{3}\tan^{-1}(3x)$

      E) $\frac{2}{9}\log\left(9x^2+1\right) - \frac{4}{3}\tan^{-1}(3x)$

(3) Mennyi $\int (3+5x)\sin(2x)\,dx$?

      A) $\frac{5}{4}\sin(2x) - \frac{5}{2}x\cos(2x) - \frac{3}{2}\cos(2x)$

      B) $-\frac{5}{4}\sin(2x) + \frac{5}{2}x\cos(2x) - \frac{3}{2}\cos(2x)$

      C) $\frac{5}{2}x\sin(2x) - \frac{1}{4}\cos(2x)$

      D) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x) - \frac{3}{2}\cos(2x)$

      E) $\frac{5}{8}\sin(2x) - \frac{3}{2}\cos^2(x) - \frac{5}{4}x\cos(2x)$

(4) Mennyi $\int_{-1}^{4} f(x)\,dx$, ha $f(x) = \begin{cases} 1 & \text{if } x < 0 \\ 1+1x & \text{if } x > 0. \end{cases}$?

      A) 9, B) 13, C) 8, D) 10, E) 11

(5) Mennyi $\int x^3 \log(2x)\,dx$?

      A) $\frac{1}{4}x^4\log(x) - \frac{x^4}{16}$, B) $\frac{1}{4}x^4\log(2x) - \frac{x^4}{16}$, C) $\frac{1}{5}x^5\log(2x) - \frac{x^5}{25}$, D) $\frac{1}{3}x^3\log(2x) - \frac{x^3}{9}$, E) $\frac{1}{2}x^4\log(2x) - \frac{x^4}{8}$

(6) Mennyi $\int \frac{3}{5^2+5^2 x} + \sin(2x) + e^{-2x}\,dx$?

      A) $-\frac{e^{-2x}}{2} - \frac{1}{2}\sin(2x) + \frac{3}{5}\tan^{-1}(x)$

      B) $-e^{-2x} - \frac{1}{2}\cos(2x) + \frac{3}{25}\tan^{-1}(x)$

      C) $-\frac{e^{-2x}}{2} + \frac{1}{2}\cos(2x) + \frac{3}{25}\tan^{-1}(x)$

      D) $-\frac{e^{-2x}}{2} - \frac{1}{2}\cos(2x) + \frac{3}{25}\tan^{-1}(x)$

      E) 13.2

(7) Mennyi $\int_{-1}^{6} f(x)\,dx$, ha $f(x) = \begin{cases} 2+4x & \text{if } x < 0 \\ 5 & \text{if } x > 0. \end{cases}$?

      A) 87, B) 89, C) 84, D) 85, E) 86

(8) Mennyi $\int x^2 \cos(3x^3)\,dx$?

      A) $\frac{1}{6}\sin\left(3x^2\right)$, B) $\frac{1}{9}\sin\left(3x^3\right)$, C) $\frac{2\sin\left(x^3\right)}{3}$, D) $\frac{1}{6}x\sin(3x) + \frac{1}{18}\cos(3x)$, E) $\frac{1}{3}x\sin(3x) + \frac{1}{9}\cos(3x)$

(9) Keresd meg az $f(x) = x^2 - 7x + 5$ es az $g(x) = 4x + 3$ fuggvenyek altal bezart teruletet!

      A) $\frac{19}{6}$, B) $\frac{1}{6}$, C) $\frac{5}{6}$, D) $\frac{17}{6}$, E) $\frac{13}{6}$

(10) Mennyi $\int \frac{1}{x^3} + \frac{1}{5x^5} + \sqrt[2]{(3x)^4}\,dx$?

      A) $-\frac{1}{12500x^4} + 9x^3 - \frac{1}{2x^2}$, B) $-\frac{1}{2500x^4} + 3x^3 - \frac{1}{2x^2}$, C) $-\frac{1}{12500x^4} + 3x^3 - \frac{1}{4x^2}$, D) $\frac{1}{12500x^4} + 3x^3 + \frac{1}{2x^2}$, E) $-\frac{1}{20x^4} + 3x^3 - \frac{1}{2x^2}$

(11) $y' = 4x^2 + 3x + 3$, $y(4) = 5$. Mennyi $y(10)$?

      A) 1394, B) 1393, C) 1389, D) 1391, E) 1397

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.37. **No.37.**

(1) Mennyi $\int (5+4x)\sin(5x)\,dx$?

      A) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \cos(5x)$
      B) $\frac{4}{25}\sin(5x) - \frac{4}{5}x\cos(5x) - \cos(5x)$
      C) $\frac{4}{5}x\sin(5x) - \frac{21}{25}\cos(5x)$
      D) $-\frac{4}{25}\sin(5x) + \frac{4}{5}x\cos(5x) - \cos(5x)$
      E) $\frac{4}{125}\sin(5x) - \frac{4}{25}x\cos(5x) - \frac{1}{5}\cos(5x)$

(2) Mennyi $\int x^2 \sin(3x^3)\,dx$?

      A) $-\frac{1}{6}\cos\left(3x^2\right)$
      B) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x)$
      C) 13.2
      D) $-\frac{1}{3}\cos\left(x^3\right)$
      E) $-\frac{1}{9}\cos\left(3x^3\right)$

(3) $y' = 5x^2 + 4x + 5$, $y(3) = 2$. Mennyi $y(10)$?

      A) $\frac{5522}{3}$, B) $\frac{5498}{3}$, C) $\frac{5492}{3}$, D) $\frac{5507}{3}$, E) $\frac{5495}{3}$

(4) Mennyi $\int \frac{1}{x^4} + \frac{1}{5x^2} + \sqrt[5]{(3x)^2}\,dx$?

      A) $\frac{5}{7}3^{2/5}x^{7/5} - \frac{1}{3x^3} - \frac{1}{5x}$, B) $\frac{15}{7}3^{2/5}x^{7/5} - \frac{1}{3x^3} - \frac{1}{25x}$, C) $\frac{5}{7}3^{2/5}x^{7/5} - \frac{1}{5x^3} - \frac{1}{25x}$, D) 13.2, E) $\frac{5}{7}3^{2/5}x^{7/5} + \frac{1}{3x^3} + \frac{1}{25x}$

(5) Mennyi $\int_{-1}^{8} f(x)\,dx$, ha $f(x) = \begin{cases} 3 + 5x & \text{if } x < 0 \\ 5 & \text{if } x > 0. \end{cases}$?

      A) 189, B) 187, C) 188, D) 186, E) 185

(6) Keresd meg az $f(x) = x^2 - 9x + 12$ es az $g(x) = 2x + 2$ fuggvenyek altal bezart teruletet!

      A) $\frac{1}{2}$, B) $\frac{9}{2}$, C) $\frac{13}{2}$, D) $\frac{11}{2}$, E) $\frac{3}{2}$

(7) Mennyi $\int x^5 \log(5x)\,dx$?

      A) $\frac{5}{6}x^6\log(5x) - \frac{5x^6}{36}$, B) $\frac{1}{6}x^6\log(5x) - \frac{x^6}{36}$, C) $\frac{1}{7}x^7\log(5x) - \frac{x^7}{49}$, D) $\frac{1}{6}x^6\log(x) - \frac{x^6}{36}$, E) $\frac{1}{5}x^5\log(5x) - \frac{x^5}{25}$

(8) Mennyi $\int x^4 \cos(5x^5)\,dx$?

      A) $\frac{1}{5}x\sin(5x) + \frac{1}{25}\cos(5x)$, B) $\frac{1}{20}x\sin(5x) + \frac{1}{100}\cos(5x)$, C) $\frac{1}{25}\sin\left(5x^5\right)$, D) $\frac{1}{20}\sin\left(5x^4\right)$, E) $\frac{4\sin\left(x^5\right)}{5}$

(9) Mennyi $\int \frac{5}{4^2 + 4^2 x} + \sin(5x) + e^{-2x}\,dx$?

      A) 13.2
      B) $-\frac{e^{-2x}}{2} + \frac{1}{5}\cos(5x) + \frac{5}{16}\tan^{-1}(x)$
      C) $-e^{-2x} - \frac{1}{5}\cos(5x) + \frac{5}{16}\tan^{-1}(x)$
      D) $-\frac{e^{-2x}}{2} - \frac{1}{5}\sin(5x) + \frac{5}{4}\tan^{-1}(x)$
      E) $-\frac{e^{-2x}}{2} - \frac{1}{5}\cos(5x) + \frac{5}{16}\tan^{-1}(x)$

(10) Mennyi $\int \frac{2x+2}{1+9x^2}\,dx$?

      A) $\frac{2}{9}\log(-2(3x+1)) - \frac{4}{9}\log(2(3x-1))$
      B) $\frac{1}{9}\log\left(9x^2+1\right) - \frac{2}{3}\tan^{-1}(3x)$
      C) $\log\left(9x^2+1\right) + 6\tan^{-1}(3x)$
      D) $2\log(3x+1) - 4\log(1-3x)$
      E) $\frac{1}{9}\log\left(9x^2+1\right) + \frac{2}{3}\tan^{-1}(3x)$

(11) Mennyi $\int_{-3}^{-1} f(x)\,dx$, ha $f(x) = \begin{cases} 4 & \text{if } x < 0 \\ 4 + 3x & \text{if } x > 0. \end{cases}$?

      A) 6, B) 8, C) 3, D) 5, E) 4

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.38. **No.38.**

(1) Mennyi $\int x^4 \cos(2x^5)\, dx$?

     A) $\frac{1}{8}\sin\left(2x^4\right)$, B) $\frac{4\sin\left(x^5\right)}{5}$, C) $\frac{1}{8}x\sin(2x) + \frac{1}{16}\cos(2x)$, D) $\frac{1}{2}x\sin(2x) + \frac{1}{4}\cos(2x)$, E) $\frac{1}{10}\sin\left(2x^5\right)$

(2) Mennyi $\int \frac{3x+2}{1+4x^2}\, dx$?

     A) $\frac{1}{8}\log(-2(2x+1)) - \frac{7}{8}\log(2(2x-1))$
     B) $\frac{3}{8}\log\left(4x^2+1\right) + \tan^{-1}(2x)$
     C) $\frac{3}{8}\log\left(4x^2+1\right) - \tan^{-1}(2x)$
     D) $\frac{3}{2}\log\left(4x^2+1\right) + 4\tan^{-1}(2x)$
     E) $\frac{1}{2}\log(-8(2x+1)) - \frac{7}{2}\log(8(2x-1))$

(3) Mennyi $\int \frac{1}{x^4} + \frac{1}{5x^2} + \sqrt[3]{(5x)^5}\, dx$?

     A) $\frac{15}{8}5^{2/3}x^{8/3} - \frac{1}{5x^3} - \frac{1}{25x}$, B) $\frac{15}{8}5^{2/3}x^{8/3} + \frac{1}{3x^3} + \frac{1}{25x}$, C) $\frac{15}{8}5^{2/3}x^{8/3} - \frac{1}{3x^3} - \frac{1}{5x}$, D) $\frac{75}{8}5^{2/3}x^{8/3} - \frac{1}{3x^3} - \frac{1}{25x}$, E) 13.2

(4) Mennyi $\int x^5 \sin(2x^6)\, dx$?

     A) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x)$
     B) $-\frac{1}{6}\cos\left(x^6\right)$
     C) 13.2
     D) $-\frac{1}{10}\cos\left(2x^5\right)$
     E) $-\frac{1}{12}\cos\left(2x^6\right)$

(5) Mennyi $\int_{-1}^{2} f(x)\, dx$, ha $f(x) = \begin{cases} 3+5x & \text{if } x < 0 \\ 1 & \text{if } x > 0. \end{cases}$?

     A) 13, B) 17, C) 14, D) 15, E) 12

(6) Mennyi $\int \frac{2}{4^2+5^2x} + \sin(4x) + e^{-4x}\, dx$?

     A) $-\frac{e^{-4x}}{4} - \frac{1}{4}\cos(4x) + \frac{1}{10}\tan^{-1}\left(\frac{5x}{4}\right)$
     B) $-e^{-4x} - \frac{1}{4}\cos(4x) + \frac{1}{10}\tan^{-1}\left(\frac{5x}{4}\right)$
     C) $-\frac{e^{-4x}}{4} - \frac{1}{4}\sin(4x) + \frac{1}{2}\tan^{-1}\left(\frac{5x}{4}\right)$
     D) $-\frac{e^{-4x}}{4} - \frac{1}{4}\cos(4x) + \frac{2}{25}\tan^{-1}\left(\frac{5x}{4}\right)$
     E) $-\frac{e^{-4x}}{4} + \frac{1}{4}\cos(4x) + \frac{1}{10}\tan^{-1}\left(\frac{5x}{4}\right)$

(7) $y' = 2x^2 + 2x + 3$, $y(2) = 5$. Mennyi $y(10)$?

     A) $\frac{2353}{3}$, B) $\frac{2344}{3}$, C) $\frac{2350}{3}$, D) $\frac{2359}{3}$, E) $\frac{2356}{3}$

(8) Mennyi $\int_{-4}^{1} f(x)\, dx$, ha $f(x) = \begin{cases} 1 & \text{if } x < 0 \\ 2+4x & \text{if } x > 0. \end{cases}$?

     A) 5, B) 6, C) 8, D) 7, E) 9

(9) Mennyi $\int (2+3x)\sin(5x)\, dx$?

     A) $\frac{3}{25}\sin(5x) - \frac{3}{5}x\cos(5x) - \frac{2}{5}\cos(5x)$
     B) $\frac{3}{5}x\sin(5x) - \frac{7}{25}\cos(5x)$
     C) $\frac{3}{125}\sin(5x) - \frac{3}{25}x\cos(5x) - \frac{2}{25}\cos(5x)$
     D) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \frac{2}{5}\cos(5x)$
     E) $-\frac{3}{25}\sin(5x) + \frac{3}{5}x\cos(5x) - \frac{2}{5}\cos(5x)$

(10) Mennyi $\int x^3 \log(4x)\, dx$?

     A) $\frac{1}{5}x^5\log(4x) - \frac{x^5}{25}$, B) $\frac{1}{4}x^4\log(4x) - \frac{x^4}{16}$, C) $\frac{1}{4}x^4\log(x) - \frac{x^4}{16}$, D) $\frac{1}{3}x^3\log(4x) - \frac{x^3}{9}$, E) $x^4\log(4x) - \frac{x^4}{4}$

(11) Keresd meg az $f(x) = x^2 - 17x + 37$ es az $g(x) = 5x + 5$ fuggvenyek altal bezart teruletet!

     A) $\frac{2}{3}$, B) $\frac{14}{3}$, C) $\frac{11}{3}$, D) $\frac{32}{3}$, E) $\frac{5}{3}$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.39. **No.39.**

(1) Mennyi $\int_{-2}^{2} f(x)\,dx$, ha $f(x) = \begin{cases} 1 & \text{if } x < 0 \\ 2 + 2x & \text{if } x > 0. \end{cases}$?

     A) 5, B) 10, C) 7, D) 6, E) 8

(2) Mennyi $\int_{-1}^{1} f(x)\,dx$, ha $f(x) = \begin{cases} 4 + 2x & \text{if } x < 0 \\ 4 & \text{if } x > 0. \end{cases}$?

     A) 4, B) 7, C) 9, D) 5, E) 6

(3) Mennyi $\int x^3 \cos(4x^4)\,dx$?

     A) $\frac{1}{16}\sin\left(4x^4\right)$, B) $\frac{1}{12}\sin\left(4x^3\right)$, C) $\frac{3\sin\left(x^4\right)}{4}$, D) $\frac{1}{12}x\sin(4x) + \frac{1}{48}\cos(4x)$, E) $\frac{1}{4}x\sin(4x) + \frac{1}{16}\cos(4x)$

(4) Mennyi $\int \frac{1}{x^3} + \frac{1}{2x^4} + \sqrt[2]{(2x)^2}\,dx$?

     A) $\frac{1}{48x^3} + x^2 + \frac{1}{2x^2}$, B) $-\frac{1}{48x^3} + x^2 - \frac{1}{4x^2}$, C) $-\frac{1}{24x^3} + x^2 - \frac{1}{2x^2}$, D) $-\frac{1}{6x^3} + x^2 - \frac{1}{2x^2}$, E) $-\frac{1}{48x^3} + 2x^2 - \frac{1}{2x^2}$

(5) Mennyi $\int (2 + 4x)\sin(3x)\,dx$?

     A) $-\frac{4}{9}\sin(3x) + \frac{4}{3}x\cos(3x) - \frac{2}{3}\cos(3x)$
     B) $\frac{4}{9}\sin(3x) - \frac{4}{3}x\cos(3x) - \frac{2}{3}\cos(3x)$
     C) $\frac{4}{27}\sin(3x) - \frac{4}{9}x\cos(3x) - \frac{2}{9}\cos(3x)$
     D) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x) - \frac{2}{3}\cos(3x)$
     E) $\frac{4}{3}x\sin(3x) - \frac{2}{9}\cos(3x)$

(6) $y' = 4x^2 + 4x + 3$, $y(5) = 2$. Mennyi $y(10)$?

     A) $\frac{3980}{3}$, B) $\frac{3986}{3}$, C) $\frac{3977}{3}$, D) $\frac{4001}{3}$, E) $\frac{3971}{3}$

(7) Mennyi $\int x^2 \log(2x)\,dx$?

     A) $\frac{2}{3}x^3 \log(2x) - \frac{2x^3}{9}$, B) $\frac{1}{3}x^3 \log(x) - \frac{x^3}{9}$, C) $\frac{1}{3}x^3 \log(2x) - \frac{x^3}{9}$, D) $\frac{1}{2}x^2 \log(2x) - \frac{x^2}{4}$, E) $\frac{1}{4}x^4 \log(2x) - \frac{x^4}{16}$

(8) Mennyi $\int \frac{2}{5^2 + 5^2 x} + \sin(5x) + e^{-5x}\,dx$?

     A) $-e^{-5x} - \frac{1}{5}\cos(5x) + \frac{2}{25}\tan^{-1}(x)$
     B) $-\frac{e^{-5x}}{5} + \frac{1}{5}\cos(5x) + \frac{2}{25}\tan^{-1}(x)$
     C) $-\frac{e^{-5x}}{5} - \frac{1}{5}\sin(5x) + \frac{2}{5}\tan^{-1}(x)$
     D) $-\frac{e^{-5x}}{5} - \frac{1}{5}\cos(5x) + \frac{2}{25}\tan^{-1}(x)$
     E) 13.2

(9) Keresd meg az $f(x) = x^2 - 9x + 9$ es az $g(x) = 3x + 4$ fuggvenyek altal bezart teruletet!

     A) $\frac{5}{3}$, B) $\frac{32}{3}$, C) $\frac{8}{3}$, D) $\frac{2}{3}$, E) $\frac{20}{3}$

(10) Mennyi $\int x^5 \sin(2x^6)\,dx$?

     A) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x)$
     B) 13.2
     C) $-\frac{1}{12}\cos\left(2x^6\right)$
     D) $-\frac{1}{6}\cos\left(x^6\right)$
     E) $-\frac{1}{10}\cos\left(2x^5\right)$

(11) Mennyi $\int \frac{4x+5}{1+4x^2}\,dx$?

     A) $2\log\left(4x^2 + 1\right) + 10\tan^{-1}(2x)$
     B) $3\log(-5(2x + 1)) - 7\log(5(2x - 1))$
     C) $\frac{3}{4}\log(-5(2x + 1)) - \frac{7}{4}\log(5(2x - 1))$
     D) $\frac{1}{2}\log\left(4x^2 + 1\right) + \frac{5}{2}\tan^{-1}(2x)$
     E) $\frac{1}{2}\log\left(4x^2 + 1\right) - \frac{5}{2}\tan^{-1}(2x)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.40. **No.40.**

(1) $y' = 2x^2 + 2x + 2$, $y(5) = 2$. Mennyi $y(10)$?

A) $\frac{1981}{3}$, B) $\frac{1984}{3}$, C) $\frac{2011}{3}$, D) $\frac{1990}{3}$, E) $\frac{1987}{3}$

(2) Mennyi $\int x^4 \cos(3x^5)\, dx$?

A) $\frac{1}{12}\sin\left(3x^4\right)$, B) $\frac{1}{15}\sin\left(3x^5\right)$, C) $\frac{4\sin\left(x^5\right)}{5}$, D) $\frac{1}{12}x\sin(3x) + \frac{1}{36}\cos(3x)$, E) $\frac{1}{3}x\sin(3x) + \frac{1}{9}\cos(3x)$

(3) Mennyi $\int x^5 \sin(2x^6)\, dx$?

A) $-\frac{1}{6}\cos\left(x^6\right)$
B) 13.2
C) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x)$
D) $-\frac{1}{12}\cos\left(2x^6\right)$
E) $-\frac{1}{10}\cos\left(2x^5\right)$

(4) Mennyi $\int_{-3}^{0} f(x)\, dx$, ha $f(x) = \begin{cases} 3 + 1x & \text{if } x < 0 \\ 3 & \text{if } x > 0. \end{cases}$?

A) 7, B) 6, C) 9, D) 4, E) 8

(5) Mennyi $\int (4 + 2x)\sin(2x)\, dx$?

A) $\frac{1}{2}\sin(2x) - x\cos(2x) - 2\cos(2x)$
B) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x) - \cos(2x)$
C) $x\sin(2x) - \frac{3}{2}\cos(2x)$
D) $-\frac{1}{2}\sin(2x) + x\cos(2x) - 2\cos(2x)$
E) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x) - 2\cos(2x)$

(6) Mennyi $\int_{-4}^{2} f(x)\, dx$, ha $f(x) = \begin{cases} 4 & \text{if } x < 0 \\ 3 + 4x & \text{if } x > 0. \end{cases}$?

A) 27, B) 30, C) 26, D) 25, E) 28

(7) Mennyi $\int x^2 \log(4x)\, dx$?

A) $\frac{1}{3}x^3\log(4x) - \frac{x^3}{9}$, B) $\frac{1}{4}x^4\log(4x) - \frac{x^4}{16}$, C) $\frac{4}{3}x^3\log(4x) - \frac{4x^3}{9}$, D) $\frac{1}{2}x^2\log(4x) - \frac{x^2}{4}$, E) $\frac{1}{3}x^3\log(x) - \frac{x^3}{9}$

(8) Keresd meg az $f(x) = x^2 - 16x + 55$ es az $g(x) = 1x + 5$ fuggvenyek altal bezart teruletet!

A) $\frac{101}{6}$, B) $\frac{95}{6}$, C) $\frac{125}{6}$, D) $\frac{77}{6}$, E) $\frac{83}{6}$

(9) Mennyi $\int \frac{1}{x^5} + \frac{1}{5x^3} + \sqrt[5]{(3x)^3}\, dx$?

A) $\frac{5}{8}3^{3/5}x^{8/5} - \frac{1}{6x^4} - \frac{1}{250x^2}$, B) $\frac{5}{8}3^{3/5}x^{8/5} + \frac{1}{4x^4} + \frac{1}{250x^2}$, C) $\frac{5}{8}3^{3/5}x^{8/5} - \frac{1}{4x^4} - \frac{1}{10x^2}$, D) $\frac{5}{8}3^{3/5}x^{8/5} - \frac{1}{4x^4} - \frac{1}{50x^2}$, E) $\frac{15}{8}3^{3/5}x^{8/5} - \frac{1}{4x^4} - \frac{1}{250x^2}$

(10) Mennyi $\int \frac{4x+3}{1+1x^2}\, dx$?

A) $2\log\left(x^2 + 1\right) - 3\tan^{-1}(x)$
B) $-\frac{7}{2}\log(3(x-1)) - \frac{1}{2}\log(-3(x+1))$
C) 17.3
D) 13.2
E) $2\log\left(x^2 + 1\right) + 3\tan^{-1}(x)$

(11) Mennyi $\int \frac{5}{2^2+2^2x} + \sin(5x) + e^{-3x}\, dx$?

A) $-e^{-3x} - \frac{1}{5}\cos(5x) + \frac{5}{4}\tan^{-1}(x)$
B) $-\frac{e^{-3x}}{3} - \frac{1}{5}\sin(5x) + \frac{5}{2}\tan^{-1}(x)$
C) 13.2
D) $-\frac{e^{-3x}}{3} + \frac{1}{5}\cos(5x) + \frac{5}{4}\tan^{-1}(x)$
E) $-\frac{e^{-3x}}{3} - \frac{1}{5}\cos(5x) + \frac{5}{4}\tan^{-1}(x)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.41. **No.41.**

(1) Mennyi $\int x^4 \cos(2x^5)\,dx$?

  A) $\frac{1}{10}\sin\left(2x^5\right)$, B) $\frac{4\sin\left(x^5\right)}{5}$, C) $\frac{1}{8}x\sin(2x) + \frac{1}{16}\cos(2x)$, D) $\frac{1}{2}x\sin(2x) + \frac{1}{4}\cos(2x)$, E) $\frac{1}{8}\sin\left(2x^4\right)$

(2) $y' = 3x^2 + 1x + 5$, $y(3) = 1$. Mennyi $y(10)$?

  A) $\frac{2091}{2}$, B) $\frac{2093}{2}$, C) $\frac{2089}{2}$, D) $\frac{2097}{2}$, E) $\frac{2109}{2}$

(3) Mennyi $\int x^5 \log(2x)\,dx$?

  A) $\frac{1}{7}x^7 \log(2x) - \frac{x^7}{49}$, B) $\frac{1}{3}x^6 \log(2x) - \frac{x^6}{18}$, C) $\frac{1}{6}x^6 \log(x) - \frac{x^6}{36}$, D) $\frac{1}{5}x^5 \log(2x) - \frac{x^5}{25}$, E) $\frac{1}{6}x^6 \log(2x) - \frac{x^6}{36}$

(4) Mennyi $\int_{-4}^{-2} f(x)\,dx$, ha $f(x) = \begin{cases} 2 + 3x & \text{if } x < 0 \\ 1 & \text{if } x > 0. \end{cases}$?

  A) 2, B) 0, C) -1, D) -2, E) 1

(5) Mennyi $\int \frac{2x+3}{1+1x^2}\,dx$?

  A) 13.2
  B) $\log\left(x^2 + 1\right) + 3\tan^{-1}(x)$
  C) $\log\left(x^2 + 1\right) - 3\tan^{-1}(x)$
  D) $\frac{1}{2}\log(-3(x+1)) - \frac{5}{2}\log(3(x-1))$
  E) 17.3

(6) Mennyi $\int_{-2}^{3} f(x)\,dx$, ha $f(x) = \begin{cases} 2 & \text{if } x < 0 \\ 4 + 2x & \text{if } x > 0. \end{cases}$?

  A) 22, B) 21, C) 25, D) 24, E) 23

(7) Mennyi $\int \frac{1}{x^2} + \frac{1}{3x^3} + \sqrt[2]{(4x)^3}\,dx$?

  A) $\frac{16x^{5/2}}{5} - \frac{1}{6x^2} - \frac{1}{x}$, B) $\frac{16x^{5/2}}{5} + \frac{1}{54x^2} + \frac{1}{x}$, C) $\frac{16x^{5/2}}{5} - \frac{1}{54x^2} - \frac{1}{3x}$, D) $\frac{16x^{5/2}}{5} - \frac{1}{18x^2} - \frac{1}{x}$, E) $\frac{64x^{5/2}}{5} - \frac{1}{54x^2} - \frac{1}{x}$

(8) Keresd meg az $f(x) = x^2 - 9x + 17$ es az $g(x) = 2x + 5$ fuggvenyek altal bezart teruletet!

  A) $\frac{1}{6}$, B) $\frac{23}{6}$, C) $\frac{19}{6}$, D) $\frac{7}{6}$, E) $\frac{11}{6}$

(9) Mennyi $\int \frac{2}{4^2 + 3^2 x} + \sin(5x) + e^{-4x}\,dx$?

  A) $-\frac{e^{-4x}}{4} - \frac{1}{5}\sin(5x) + \frac{1}{2}\tan^{-1}\left(\frac{3x}{4}\right)$
  B) $-\frac{e^{-4x}}{4} - \frac{1}{5}\cos(5x) + \frac{2}{9}\tan^{-1}\left(\frac{3x}{4}\right)$
  C) $-\frac{e^{-4x}}{4} + \frac{1}{5}\cos(5x) + \frac{1}{6}\tan^{-1}\left(\frac{3x}{4}\right)$
  D) $-e^{-4x} - \frac{1}{5}\cos(5x) + \frac{1}{6}\tan^{-1}\left(\frac{3x}{4}\right)$
  E) $-\frac{e^{-4x}}{4} - \frac{1}{5}\cos(5x) + \frac{1}{6}\tan^{-1}\left(\frac{3x}{4}\right)$

(10) Mennyi $\int x^4 \sin(5x^5)\,dx$?

  A) $-\frac{1}{25}\cos\left(5x^5\right)$
  B) 13.2
  C) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x)$
  D) $-\frac{1}{20}\cos\left(5x^4\right)$
  E) $-\frac{1}{5}\cos\left(x^5\right)$

(11) Mennyi $\int (2 + 3x)\sin(4x)\,dx$?

  A) $\frac{3}{16}\sin(4x) - \frac{3}{4}x\cos(4x) - \frac{1}{2}\cos(4x)$
  B) $\frac{3}{64}\sin(4x) - \frac{3}{16}x\cos(4x) - \frac{1}{8}\cos(4x)$
  C) $\frac{3}{4}x\sin(4x) - \frac{5}{16}\cos(4x)$
  D) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x) - \frac{1}{2}\cos(4x)$
  E) $-\frac{3}{16}\sin(4x) + \frac{3}{4}x\cos(4x) - \frac{1}{2}\cos(4x)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.42. **No.42.**

(1) Mennyi $\int \frac{5x+3}{1+9x^2}\,dx$?

      A) $\frac{5}{2}\log\left(9x^2+1\right)+9\tan^{-1}(3x)$

      B) $\frac{5}{18}\log\left(9x^2+1\right)-\tan^{-1}(3x)$

      C) $\frac{5}{18}\log\left(9x^2+1\right)+\tan^{-1}(3x)$

      D) $2\log(-3(3x+1))-7\log(3(3x-1))$

      E) $\frac{2}{9}\log(-3(3x+1))-\frac{7}{9}\log(3(3x-1))$

(2) Mennyi $\int \frac{1}{x^4}+\frac{1}{5x^3}+\sqrt[4]{(2x)^4}\,dx$?

      A) $-\frac{1}{5x^3}+x^2-\frac{1}{250x^2}$, B) $-\frac{1}{3x^3}+x^2-\frac{1}{10x^2}$, C) $-\frac{1}{3x^3}+x^2-\frac{1}{50x^2}$, D) $-\frac{1}{3x^3}+2x^2-\frac{1}{250x^2}$, E) $\frac{1}{3x^3}+x^2+\frac{1}{250x^2}$

(3) Mennyi $\int \frac{5}{4^2+4^2x}+\sin(2x)+e^{-3x}\,dx$?

      A) 13.2

      B) $-\frac{e^{-3x}}{3}-\frac{1}{2}\cos(2x)+\frac{5}{16}\tan^{-1}(x)$

      C) $-\frac{e^{-3x}}{3}+\frac{1}{2}\cos(2x)+\frac{5}{16}\tan^{-1}(x)$

      D) $-\frac{e^{-3x}}{3}-\frac{1}{2}\sin(2x)+\frac{5}{4}\tan^{-1}(x)$

      E) $-e^{-3x}-\frac{1}{2}\cos(2x)+\frac{5}{16}\tan^{-1}(x)$

(4) Mennyi $\int_{-4}^{1} f(x)\,dx$, ha $f(x)=\begin{cases}5 & \text{if } x<0 \\ 1+5x & \text{if } x>0.\end{cases}$?

      A) $\frac{39}{2}$, B) $\frac{47}{2}$, C) $\frac{37}{2}$, D) $\frac{41}{2}$, E) $\frac{43}{2}$

(5) $y'=2x^2+5x+1$, $y(2)=2$. Mennyi $y(10)$?

      A) $\frac{2734}{3}$, B) $\frac{2713}{3}$, C) $\frac{2716}{3}$, D) $\frac{2704}{3}$, E) $\frac{2710}{3}$

(6) Keresd meg az $f(x)=x^2-11x+9$ es az $g(x)=4x+3$ fuggvenyek altal bezart teruletet!

      A) $\frac{95}{6}$, B) $\frac{125}{6}$, C) $\frac{83}{6}$, D) $\frac{65}{6}$, E) $\frac{101}{6}$

(7) Mennyi $\int_{-1}^{5} f(x)\,dx$, ha $f(x)=\begin{cases}3+4x & \text{if } x<0 \\ 3 & \text{if } x>0.\end{cases}$?

      A) 64, B) 63, C) 65, D) 68, E) 66

(8) Mennyi $\int x^5\sin(4x^6)\,dx$?

      A) $-\frac{1}{20}\cos\left(4x^5\right)$

      B) $-\frac{1}{6}\cos\left(x^6\right)$

      C) $-\frac{1}{24}\cos\left(4x^6\right)$

      D) $\frac{1}{16}\sin(4x)-\frac{1}{4}x\cos(4x)$

      E) 13.2

(9) Mennyi $\int x^4\cos(5x^5)\,dx$?

      A) $\frac{1}{5}x\sin(5x)+\frac{1}{25}\cos(5x)$, B) $\frac{4\sin\left(x^5\right)}{5}$, C) $\frac{1}{20}x\sin(5x)+\frac{1}{100}\cos(5x)$, D) $\frac{1}{20}\sin\left(5x^4\right)$, E) $\frac{1}{25}\sin\left(5x^5\right)$

(10) Mennyi $\int (5+2x)\sin(5x)\,dx$?

      A) $-\frac{2}{25}\sin(5x)+\frac{2}{5}x\cos(5x)-\cos(5x)$

      B) $\frac{2}{25}\sin(5x)-\frac{2}{5}x\cos(5x)-\cos(5x)$

      C) $\frac{1}{25}\sin(5x)-\frac{1}{5}x\cos(5x)-\cos(5x)$

      D) $\frac{2}{125}\sin(5x)-\frac{2}{25}x\cos(5x)-\frac{1}{5}\cos(5x)$

      E) $\frac{2}{5}x\sin(5x)-\frac{23}{25}\cos(5x)$

(11) Mennyi $\int x^5\log(2x)\,dx$?

      A) $\frac{1}{7}x^7\log(2x)-\frac{x^7}{49}$, B) $\frac{1}{3}x^6\log(2x)-\frac{x^6}{18}$, C) $\frac{1}{5}x^5\log(2x)-\frac{x^5}{25}$, D) $\frac{1}{6}x^6\log(2x)-\frac{x^6}{36}$, E) $\frac{1}{6}x^6\log(x)-\frac{x^6}{36}$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.43. **No.43.**

(1) Mennyi $\int (3 + 2x) \sin(5x)\, dx$?

    A) $\frac{2}{125} \sin(5x) - \frac{2}{25} x \cos(5x) - \frac{3}{25} \cos(5x)$
    B) $-\frac{2}{25} \sin(5x) + \frac{2}{5} x \cos(5x) - \frac{3}{5} \cos(5x)$
    C) $\frac{2}{5} x \sin(5x) - \frac{13}{25} \cos(5x)$
    D) $\frac{1}{25} \sin(5x) - \frac{1}{5} x \cos(5x) - \frac{3}{5} \cos(5x)$
    E) $\frac{2}{25} \sin(5x) - \frac{2}{5} x \cos(5x) - \frac{3}{5} \cos(5x)$

(2) $y' = 3x^2 + 3x + 1$, $y(3) = 2$. Mennyi $y(10)$?

    A) $\frac{2225}{2}$, B) $\frac{2237}{2}$, C) $\frac{2219}{2}$, D) $\frac{2223}{2}$, E) $\frac{2221}{2}$

(3) Mennyi $\int \frac{5x+4}{1+4x^2}\, dx$?

    A) $\frac{5}{8} \log\left(4x^2 + 1\right) + 2\tan^{-1}(2x)$
    B) $\frac{5}{8} \log\left(4x^2 + 1\right) - 2\tan^{-1}(2x)$
    C) $\frac{3}{2} \log(-4(2x + 1)) - \frac{13}{2} \log(4(2x - 1))$
    D) $\frac{3}{8} \log(-4(2x + 1)) - \frac{13}{8} \log(4(2x - 1))$
    E) $\frac{5}{2} \log\left(4x^2 + 1\right) + 8\tan^{-1}(2x)$

(4) Mennyi $\int x^4 \log(2x)\, dx$?

    A) $\frac{1}{5} x^5 \log(2x) - \frac{x^5}{25}$, B) $\frac{1}{4} x^4 \log(2x) - \frac{x^4}{16}$, C) $\frac{1}{6} x^6 \log(2x) - \frac{x^6}{36}$, D) $\frac{2}{5} x^5 \log(2x) - \frac{2x^5}{25}$, E) $\frac{1}{5} x^5 \log(x) - \frac{x^5}{25}$

(5) Mennyi $\int \frac{2}{3^2 + 5^2 x} + \sin(3x) + e^{-3x}\, dx$?

    A) $-e^{-3x} - \frac{1}{3} \cos(3x) + \frac{2}{15} \tan^{-1}\left(\frac{5x}{3}\right)$
    B) $-\frac{e^{-3x}}{3} - \frac{1}{3} \sin(3x) + \frac{2}{3} \tan^{-1}\left(\frac{5x}{3}\right)$
    C) $-\frac{e^{-3x}}{3} + \frac{1}{3} \cos(3x) + \frac{2}{15} \tan^{-1}\left(\frac{5x}{3}\right)$
    D) $-\frac{e^{-3x}}{3} - \frac{1}{3} \cos(3x) + \frac{2}{25} \tan^{-1}\left(\frac{5x}{3}\right)$
    E) $-\frac{e^{-3x}}{3} - \frac{1}{3} \cos(3x) + \frac{2}{15} \tan^{-1}\left(\frac{5x}{3}\right)$

(6) Mennyi $\int x^5 \sin(3x^6)\, dx$?

    A) $-\frac{1}{18} \cos\left(3x^6\right)$
    B) 13.2
    C) $-\frac{1}{15} \cos\left(3x^5\right)$
    D) $-\frac{1}{6} \cos\left(x^6\right)$
    E) $\frac{1}{9} \sin(3x) - \frac{1}{3} x \cos(3x)$

(7) Mennyi $\int x^3 \cos(3x^4)\, dx$?

    A) $\frac{3 \sin\left(x^4\right)}{4}$, B) $\frac{1}{3} x \sin(3x) + \frac{1}{9} \cos(3x)$, C) $\frac{1}{9} x \sin(3x) + \frac{1}{27} \cos(3x)$, D) $\frac{1}{9} \sin\left(3x^3\right)$, E) $\frac{1}{12} \sin\left(3x^4\right)$

(8) Mennyi $\int \frac{1}{x^2} + \frac{1}{2x^4} + \sqrt[5]{(2x)^5}\, dx$?

    A) $-\frac{1}{48x^3} + 2x^2 - \frac{1}{x}$, B) $-\frac{1}{48x^3} + x^2 - \frac{1}{3x}$, C) $-\frac{1}{6x^3} + x^2 - \frac{1}{x}$, D) $\frac{1}{48x^3} + x^2 + \frac{1}{x}$, E) $-\frac{1}{24x^3} + x^2 - \frac{1}{x}$

(9) Keresd meg az $f(x) = x^2 - 14x + 24$ es az $g(x) = 4x + 3$ fuggvenyek altal bezart teruletet!

    A) $\frac{14}{3}$, B) $\frac{32}{3}$, C) $\frac{8}{3}$, D) $\frac{20}{3}$, E) $\frac{11}{3}$

(10) Mennyi $\int_{-2}^{0} f(x)\, dx$, ha $f(x) = \begin{cases} 4 & \text{if } x < 0 \\ 1 + 1x & \text{if } x > 0. \end{cases}$?

    A) 8, B) 5, C) 6, D) 7, E) 9

(11) Mennyi $\int_{-4}^{5} f(x)\, dx$, ha $f(x) = \begin{cases} 4 + 5x & \text{if } x < 0 \\ 3 & \text{if } x > 0. \end{cases}$?

    A) $\frac{189}{2}$, B) $\frac{185}{2}$, C) $\frac{181}{2}$, D) $\frac{183}{2}$, E) $\frac{179}{2}$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.44. **No.44.**

(1) Mennyi $\int_{-1}^{5} f(x)\,dx$, ha $f(x) = \begin{cases} 3 & \text{if } x < 0 \\ 5 + 2x & \text{if } x > 0. \end{cases}$?

   A) 50, B) 48, C) 53, D) 49, E) 51

(2) Mennyi $\int (3 + 2x)\sin(2x)\,dx$?
   A) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x) - \frac{3}{2}\cos(2x)$
   B) $-\frac{1}{2}\sin(2x) + x\cos(2x) - \frac{3}{2}\cos(2x)$
   C) $\frac{1}{2}\sin(2x) - x\cos(2x) - \frac{3}{2}\cos(2x)$
   D) $\frac{1}{4}\sin(2x) - \frac{3}{2}\cos^2(x) - \frac{1}{2}x\cos(2x)$
   E) $x\sin(2x) - \cos(2x)$

(3) Mennyi $\int_{-3}^{2} f(x)\,dx$, ha $f(x) = \begin{cases} 4 + 3x & \text{if } x < 0 \\ 3 & \text{if } x > 0. \end{cases}$?

   A) 22, B) 19, C) 21, D) 20, E) 23

(4) Mennyi $\int x^4 \sin(5x^5)\,dx$?
   A) $-\frac{1}{20}\cos\left(5x^4\right)$
   B) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x)$
   C) 13.2
   D) $-\frac{1}{5}\cos\left(x^5\right)$
   E) $-\frac{1}{25}\cos\left(5x^5\right)$

(5) Mennyi $\int \frac{2}{4^2 + 2^2 x} + \sin(5x) + e^{-3x}\,dx$?
   A) $-e^{-3x} - \frac{1}{5}\cos(5x) + \frac{1}{4}\tan^{-1}\left(\frac{x}{2}\right)$
   B) $-\frac{e^{-3x}}{3} - \frac{1}{5}\cos(5x) + \frac{1}{2}\tan^{-1}\left(\frac{x}{2}\right)$
   C) $-\frac{e^{-3x}}{3} - \frac{1}{5}\cos(5x) + \frac{1}{4}\tan^{-1}\left(\frac{x}{2}\right)$
   D) $-\frac{e^{-3x}}{3} - \frac{1}{5}\sin(5x) + \frac{1}{2}\tan^{-1}\left(\frac{x}{2}\right)$
   E) $-\frac{e^{-3x}}{3} + \frac{1}{5}\cos(5x) + \frac{1}{4}\tan^{-1}\left(\frac{x}{2}\right)$

(6) Keresd meg az $f(x) = x^2 - 12x + 16$ es az $g(x) = 3x + 2$ fuggvenyek altal bezart teruletet!
   A) $\frac{83}{6}$, B) $\frac{101}{6}$, C) $\frac{89}{6}$, D) $\frac{77}{6}$, E) $\frac{125}{6}$

(7) Mennyi $\int \frac{1}{x^2} + \frac{1}{2x^3} + \sqrt[3]{(3x)^2}\,dx$?
   A) $\frac{3}{5}3^{2/3}x^{5/3} - \frac{1}{8x^2} - \frac{1}{x}$, B) $\frac{3}{5}3^{2/3}x^{5/3} - \frac{1}{4x^2} - \frac{1}{x}$, C) $\frac{9}{5}3^{2/3}x^{5/3} - \frac{1}{16x^2} - \frac{1}{x}$, D) $\frac{3}{5}3^{2/3}x^{5/3} + \frac{1}{16x^2} + \frac{1}{x}$, E) $\frac{3}{5}3^{2/3}x^{5/3} - \frac{1}{16x^2} - \frac{1}{3x}$

(8) Mennyi $\int \frac{3x+5}{1+4x^2}\,dx$?
   A) $\frac{3}{2}\log\left(4x^2 + 1\right) + 10\tan^{-1}(2x)$
   B) $\frac{3}{8}\log\left(4x^2 + 1\right) - \frac{5}{2}\tan^{-1}(2x)$
   C) $\frac{7}{2}\log(-5(2x+1)) - \frac{13}{2}\log(5(2x-1))$
   D) $\frac{7}{8}\log(-5(2x+1)) - \frac{13}{8}\log(5(2x-1))$
   E) $\frac{3}{8}\log\left(4x^2 + 1\right) + \frac{5}{2}\tan^{-1}(2x)$

(9) Mennyi $\int x^3 \cos(5x^4)\,dx$?
   A) $\frac{1}{20}\sin\left(5x^4\right)$, B) $\frac{1}{5}x\sin(5x) + \frac{1}{25}\cos(5x)$, C) $\frac{3\sin\left(x^4\right)}{4}$, D) $\frac{1}{15}\sin\left(5x^3\right)$, E) $\frac{1}{15}x\sin(5x) + \frac{1}{75}\cos(5x)$

(10) Mennyi $\int x^5 \log(4x)\,dx$?
   A) $\frac{1}{5}x^5\log(4x) - \frac{x^5}{25}$, B) $\frac{1}{7}x^7\log(4x) - \frac{x^7}{49}$, C) $\frac{1}{6}x^6\log(x) - \frac{x^6}{36}$, D) $\frac{2}{3}x^6\log(4x) - \frac{x^6}{9}$, E) $\frac{1}{6}x^6\log(4x) - \frac{x^6}{36}$

(11) $y' = 2x^2 + 4x + 3$, $y(5) = 1$. Mennyi $y(10)$?
   A) $\frac{2230}{3}$, B) $\frac{2227}{3}$, C) $\frac{2218}{3}$, D) $\frac{2248}{3}$, E) $\frac{2224}{3}$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.45. **No.45.**

(1) Mennyi $\int x^3 \sin(2x^4)\, dx$?

    A) 13.2
    B) $-\frac{1}{4}\cos\left(x^4\right)$
    C) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x)$
    D) $-\frac{1}{6}\cos\left(2x^3\right)$
    E) $-\frac{1}{8}\cos\left(2x^4\right)$

(2) Mennyi $\int_{-3}^{2} f(x)\, dx$, ha $f(x) = \begin{cases} 4 & \text{if } x < 0 \\ 1 + 4x & \text{if } x > 0. \end{cases}$?

    A) 21, B) 20, C) 22, D) 17, E) 19

(3) Mennyi $\int \frac{4x+3}{1+1x^2}\, dx$?

    A) $2\log\left(x^2 + 1\right) - 3\tan^{-1}(x)$
    B) 17.3
    C) 13.2
    D) $2\log\left(x^2 + 1\right) + 3\tan^{-1}(x)$
    E) $-\frac{7}{2}\log(3(x-1)) - \frac{1}{2}\log(-3(x+1))$

(4) $y' = 4x^2 + 3x + 4$, $y(4) = 3$. Mennyi $y(10)$?

    A) 1401, B) 1392, C) 1394, D) 1393, E) 1391

(5) Mennyi $\int (3 + 4x)\sin(5x)\, dx$?

    A) $-\frac{4}{25}\sin(5x) + \frac{4}{5}x\cos(5x) - \frac{3}{5}\cos(5x)$
    B) $\frac{4}{25}\sin(5x) - \frac{4}{5}x\cos(5x) - \frac{3}{5}\cos(5x)$
    C) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \frac{3}{5}\cos(5x)$
    D) $\frac{4}{125}\sin(5x) - \frac{4}{25}x\cos(5x) - \frac{3}{25}\cos(5x)$
    E) $\frac{4}{5}x\sin(5x) - \frac{11}{25}\cos(5x)$

(6) Keresd meg az $f(x) = x^2 - 12x + 26$ es az $g(x) = 2x + 2$ fuggvenyek altal bezart teruletet!

    A) $\frac{5}{3}$, B) $\frac{10}{3}$, C) $\frac{1}{3}$, D) $\frac{2}{3}$, E) $\frac{4}{3}$

(7) Mennyi $\int x^2 \log(3x)\, dx$?

    A) $\frac{1}{2}x^2\log(3x) - \frac{x^2}{4}$, B) $\frac{1}{3}x^3\log(3x) - \frac{x^3}{9}$, C) $x^3\log(3x) - \frac{x^3}{3}$, D) $\frac{1}{4}x^4\log(3x) - \frac{x^4}{16}$, E) $\frac{1}{3}x^3\log(x) - \frac{x^3}{9}$

(8) Mennyi $\int_{-4}^{2} f(x)\, dx$, ha $f(x) = \begin{cases} 2 + 2x & \text{if } x < 0 \\ 2 & \text{if } x > 0. \end{cases}$?

    A) 12, B) 13, C) 15, D) 16, E) 14

(9) Mennyi $\int \frac{5}{2^2 + 5^2 x} + \sin(3x) + e^{-3x}\, dx$?

    A) $-\frac{e^{-3x}}{3} - \frac{1}{3}\cos(3x) + \frac{1}{2}\tan^{-1}\left(\frac{5x}{2}\right)$
    B) $-e^{-3x} - \frac{1}{3}\cos(3x) + \frac{1}{2}\tan^{-1}\left(\frac{5x}{2}\right)$
    C) $-\frac{e^{-3x}}{3} - \frac{1}{3}\sin(3x) + \frac{5}{2}\tan^{-1}\left(\frac{5x}{2}\right)$
    D) $-\frac{e^{-3x}}{3} + \frac{1}{3}\cos(3x) + \frac{1}{2}\tan^{-1}\left(\frac{5x}{2}\right)$
    E) $-\frac{e^{-3x}}{3} - \frac{1}{3}\cos(3x) + \frac{1}{5}\tan^{-1}\left(\frac{5x}{2}\right)$

(10) Mennyi $\int \frac{1}{x^5} + \frac{1}{5x^2} + \sqrt[4]{(5x)^3}\, dx$?

    A) $\frac{20}{7}5^{3/4}x^{7/4} - \frac{1}{4x^4} - \frac{1}{25x}$, B) $\frac{4}{7}5^{3/4}x^{7/4} - \frac{1}{4x^4} - \frac{1}{5x}$, C) $\frac{4}{7}5^{3/4}x^{7/4} - \frac{1}{4x^4} - \frac{1}{25x}$, D) 13.2, E) $\frac{4}{7}5^{3/4}x^{7/4} + \frac{1}{4x^4} + \frac{1}{25x}$

(11) Mennyi $\int x^3 \cos(3x^4)\, dx$?

    A) $\frac{1}{9}x\sin(3x) + \frac{1}{27}\cos(3x)$, B) $\frac{1}{12}\sin\left(3x^4\right)$, C) $\frac{3\sin\left(x^4\right)}{4}$, D) $\frac{1}{3}x\sin(3x) + \frac{1}{9}\cos(3x)$, E) $\frac{1}{9}\sin\left(3x^3\right)$

1^2:　　　, 2^2:　　　, 3^2:　　　, 4^2:　　　, 5^2:　　　, 6^2:　　　, 7^2:　　　, 8^2:　　　, 9^2:　　　, 10^2:　　　, 11^2:　　　　,

0.46. **No.46.**

(1) Mennyi $\int x^3 \cos(5x^4)\, dx$?

  A) $\frac{1}{15}\sin\left(5x^3\right)$, B) $\frac{1}{20}\sin\left(5x^4\right)$, C) $\frac{1}{5}x\sin(5x) + \frac{1}{25}\cos(5x)$, D) $\frac{1}{15}x\sin(5x) + \frac{1}{75}\cos(5x)$, E) $\frac{3\sin\left(x^4\right)}{4}$

(2) Mennyi $\int x^2 \sin(4x^3)\, dx$?

  A) $-\frac{1}{3}\cos\left(x^3\right)$
  B) 13.2
  C) $-\frac{1}{8}\cos\left(4x^2\right)$
  D) $-\frac{1}{12}\cos\left(4x^3\right)$
  E) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x)$

(3) Mennyi $\int \frac{1}{x^3} + \frac{1}{2x^2} + \sqrt[2]{(3x)^3}\, dx$?

  A) $\frac{6}{5}\sqrt{3}x^{5/2} - \frac{1}{4x^2} - \frac{1}{4x}$, B) 13.2, C) $\frac{6}{5}\sqrt{3}x^{5/2} + \frac{1}{2x^2} + \frac{1}{4x}$, D) $\frac{18}{5}\sqrt{3}x^{5/2} - \frac{1}{2x^2} - \frac{1}{4x}$, E) $\frac{6}{5}\sqrt{3}x^{5/2} - \frac{1}{2x^2} - \frac{1}{2x}$

(4) Mennyi $\int_{-4}^{-1} f(x)\, dx$, ha $f(x) = \begin{cases} 3 + 1x & \text{if } x < 0 \\ 2 & \text{if } x > 0. \end{cases}$?

  A) 3, B) 4, C) 2, D) 8, E) 6

(5) Mennyi $\int \frac{3x+2}{1+4x^2}\, dx$?

  A) $\frac{1}{2}\log(-8(2x+1)) - \frac{7}{2}\log(8(2x-1))$
  B) $\frac{3}{8}\log\left(4x^2+1\right) - \tan^{-1}(2x)$
  C) $\frac{3}{8}\log\left(4x^2+1\right) + \tan^{-1}(2x)$
  D) $\frac{3}{2}\log\left(4x^2+1\right) + 4\tan^{-1}(2x)$
  E) $\frac{1}{8}\log(-2(2x+1)) - \frac{7}{8}\log(2(2x-1))$

(6) Mennyi $\int \frac{2}{3^2+3^2 x} + \sin(2x) + e^{-2x}\, dx$?

  A) $-\frac{e^{-2x}}{2} - \frac{1}{2}\cos(2x) + \frac{2}{9}\tan^{-1}(x)$
  B) 13.2
  C) $-e^{-2x} - \frac{1}{2}\cos(2x) + \frac{2}{9}\tan^{-1}(x)$
  D) $-\frac{e^{-2x}}{2} - \frac{1}{2}\sin(2x) + \frac{2}{3}\tan^{-1}(x)$
  E) $-\frac{e^{-2x}}{2} + \frac{1}{2}\cos(2x) + \frac{2}{9}\tan^{-1}(x)$

(7) Mennyi $\int x^5 \log(5x)\, dx$?

  A) $\frac{1}{6}x^6\log(5x) - \frac{x^6}{36}$, B) $\frac{5}{6}x^6\log(5x) - \frac{5x^6}{36}$, C) $\frac{1}{7}x^7\log(5x) - \frac{x^7}{49}$, D) $\frac{1}{5}x^5\log(5x) - \frac{x^5}{25}$, E) $\frac{1}{6}x^6\log(x) - \frac{x^6}{36}$

(8) Mennyi $\int_{-4}^{-2} f(x)\, dx$, ha $f(x) = \begin{cases} 5 & \text{if } x < 0 \\ 3 + 3x & \text{if } x > 0. \end{cases}$?

  A) 7, B) 5, C) 6, D) 8, E) 10

(9) $y' = 3x^2 + 1x + 4$, $y(3) = 5$. Mennyi $y(10)$?

  A) $\frac{2103}{2}$, B) $\frac{2091}{2}$, C) $\frac{2089}{2}$, D) $\frac{2093}{2}$, E) $\frac{2083}{2}$

(10) Mennyi $\int (2 + 2x)\sin(2x)\, dx$?

  A) $\frac{1}{2}\sin(2x) - x\cos(2x) - \cos(2x)$
  B) $-\frac{1}{2}\sin(2x) + x\cos(2x) - \cos(2x)$
  C) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x) - \frac{1}{2}\cos(2x)$
  D) $x\sin(2x) - \frac{1}{2}\cos(2x)$
  E) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x) - \cos(2x)$

(11) Keresd meg az $f(x) = x^2 - 16x + 38$ es az $g(x) = 3x + 2$ fuggvenyek altal bezart teruletet!

  A) $\frac{77}{6}$, B) $\frac{83}{6}$, C) $\frac{65}{6}$, D) $\frac{125}{6}$, E) $\frac{89}{6}$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.47. **No.47.**

(1) Mennyi $\int x^3 \log(5x)\, dx$?

A) $\frac{1}{5}x^5 \log(5x) - \frac{x^5}{25}$, B) $\frac{5}{4}x^4 \log(5x) - \frac{5x^4}{16}$, C) $\frac{1}{4}x^4 \log(5x) - \frac{x^4}{16}$, D) $\frac{1}{4}x^4 \log(x) - \frac{x^4}{16}$, E) $\frac{1}{3}x^3 \log(5x) - \frac{x^3}{9}$

(2) Keresd meg az $f(x) = x^2 - 10x + 11$ es az $g(x) = 4x + 3$ fuggvenyek altal bezart teruletet!

A) $\frac{13}{3}$, B) $\frac{1}{3}$, C) $\frac{8}{3}$, D) $\frac{4}{3}$, E) $\frac{7}{3}$

(3) Mennyi $\int \frac{1}{x^5} + \frac{1}{2x^5} + \sqrt[2]{(2x)^3}\, dx$?

A) $\frac{4}{5}\sqrt{2}x^{5/2} - \frac{17}{64x^4}$, B) $\frac{4}{5}\sqrt{2}x^{5/2} - \frac{67}{384x^4}$, C) $\frac{8}{5}\sqrt{2}x^{5/2} - \frac{33}{128x^4}$, D) $\frac{4}{5}\sqrt{2}x^{5/2} - \frac{3}{8x^4}$, E) $\frac{4}{5}\sqrt{2}x^{5/2} + \frac{33}{128x^4}$

(4) Mennyi $\int (4 + 5x)\sin(2x)\, dx$?

A) $\frac{5}{8}\sin(2x) - 2\cos^2(x) - \frac{5}{4}x\cos(2x)$
B) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x) - 2\cos(2x)$
C) $\frac{5}{2}x\sin(2x) - \frac{3}{4}\cos(2x)$
D) $-\frac{5}{4}\sin(2x) + \frac{5}{2}x\cos(2x) - 2\cos(2x)$
E) $\frac{5}{4}\sin(2x) - \frac{5}{2}x\cos(2x) - 2\cos(2x)$

(5) Mennyi $\int x^3 \sin(2x^4)\, dx$?

A) $-\frac{1}{8}\cos\left(2x^4\right)$
B) $-\frac{1}{6}\cos\left(2x^3\right)$
C) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x)$
D) 13.2
E) $-\frac{1}{4}\cos\left(x^4\right)$

(6) Mennyi $\int_{-1}^{8} f(x)\, dx$, ha $f(x) = \begin{cases} 3 + 2x & \text{if } x < 0 \\ 1 & \text{if } x > 0. \end{cases}$?

A) 87, B) 89, C) 88, D) 86, E) 85

(7) $y' = 1x^2 + 4x + 5$, $y(2) = 1$. Mennyi $y(10)$?

A) $\frac{1673}{3}$, B) $\frac{1661}{3}$, C) $\frac{1676}{3}$, D) $\frac{1691}{3}$, E) $\frac{1679}{3}$

(8) Mennyi $\int \frac{5x+2}{1+9x^2}\, dx$?

A) $\frac{1}{18}\log(-2(3x+1)) - \frac{11}{18}\log(2(3x-1))$
B) $\frac{5}{2}\log\left(9x^2 + 1\right) + 6\tan^{-1}(3x)$
C) $\frac{5}{18}\log\left(9x^2 + 1\right) + \frac{2}{3}\tan^{-1}(3x)$
D) $\frac{1}{2}\log(-2(3x+1)) - \frac{11}{2}\log(2(3x-1))$
E) $\frac{5}{18}\log\left(9x^2 + 1\right) - \frac{2}{3}\tan^{-1}(3x)$

(9) Mennyi $\int x^4 \cos(2x^5)\, dx$?

A) $\frac{1}{8}\sin\left(2x^4\right)$, B) $\frac{1}{10}\sin\left(2x^5\right)$, C) $\frac{1}{8}x\sin(2x) + \frac{1}{16}\cos(2x)$, D) $\frac{4\sin\left(x^5\right)}{5}$, E) $\frac{1}{2}x\sin(2x) + \frac{1}{4}\cos(2x)$

(10) Mennyi $\int_{-2}^{2} f(x)\, dx$, ha $f(x) = \begin{cases} 3 & \text{if } x < 0 \\ 4 + 2x & \text{if } x > 0. \end{cases}$?

A) 13, B) 19, C) 14, D) 16, E) 18

(11) Mennyi $\int \frac{3}{4^2 + 5^2 x} + \sin(3x) + e^{-2x}\, dx$?

A) $-\frac{e^{-2x}}{2} + \frac{1}{3}\cos(3x) + \frac{3}{20}\tan^{-1}\left(\frac{5x}{4}\right)$
B) $-e^{-2x} - \frac{1}{3}\cos(3x) + \frac{3}{20}\tan^{-1}\left(\frac{5x}{4}\right)$
C) $-\frac{e^{-2x}}{2} - \frac{1}{3}\cos(3x) + \frac{3}{20}\tan^{-1}\left(\frac{5x}{4}\right)$
D) $-\frac{e^{-2x}}{2} - \frac{1}{3}\cos(3x) + \frac{3}{25}\tan^{-1}\left(\frac{5x}{4}\right)$
E) $-\frac{e^{-2x}}{2} - \frac{1}{3}\sin(3x) + \frac{3}{4}\tan^{-1}\left(\frac{5x}{4}\right)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.48. **No.48.**

(1) Mennyi $\int x^2 \sin(4x^3)\,dx$?

      A) $-\frac{1}{12}\cos\left(4x^3\right)$

      B) $-\frac{1}{8}\cos\left(4x^2\right)$

      C) 13.2

      D) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x)$

      E) $-\frac{1}{3}\cos\left(x^3\right)$

(2) Mennyi $\int_{-3}^{5} f(x)\,dx$, ha $f(x) = \begin{cases} 4+4x & \text{if } x<0 \\ 5 & \text{if } x>0. \end{cases}$?

      A) 83, B) 80, C) 81, D) 85, E) 84

(3) Mennyi $\int_{-3}^{-2} f(x)\,dx$, ha $f(x) = \begin{cases} 1 & \text{if } x<0 \\ 5+4x & \text{if } x>0. \end{cases}$?

      A) -3, B) -1, C) 0, D) 1, E) -2

(4) Keresd meg az $f(x) = x^2 - 9x + 16$ es az $g(x) = 1x + 1$ fuggvenyek altal bezart teruletet!

      A) $\frac{7}{3}$, B) $\frac{8}{3}$, C) $\frac{2}{3}$, D) $\frac{11}{3}$, E) $\frac{4}{3}$

(5) Mennyi $\int \frac{3x+5}{1+1x^2}\,dx$?

      A) $\log(-5(x+1)) - 4\log(5(x-1))$

      B) 17.3

      C) $\frac{3}{2}\log\left(x^2+1\right) + 5\tan^{-1}(x)$

      D) $\frac{3}{2}\log\left(x^2+1\right) - 5\tan^{-1}(x)$

      E) 13.2

(6) $y' = 3x^2 + 4x + 1$, $y(2) = 1$. Mennyi $y(10)$?

      A) 1183, B) 1187, C) 1193, D) 1188, E) 1186

(7) Mennyi $\int \frac{3}{3^2+4^2x} + \sin(2x) + e^{-4x}\,dx$?

      A) $-\frac{e^{-4x}}{4} + \frac{1}{2}\cos(2x) + \frac{1}{4}\tan^{-1}\left(\frac{4x}{3}\right)$

      B) $-\frac{e^{-4x}}{4} - \frac{1}{2}\cos(2x) + \frac{3}{16}\tan^{-1}\left(\frac{4x}{3}\right)$

      C) $-\frac{e^{-4x}}{4} - \frac{1}{2}\sin(2x) + \tan^{-1}\left(\frac{4x}{3}\right)$

      D) $-e^{-4x} - \frac{1}{2}\cos(2x) + \frac{1}{4}\tan^{-1}\left(\frac{4x}{3}\right)$

      E) $-\frac{e^{-4x}}{4} - \frac{1}{2}\cos(2x) + \frac{1}{4}\tan^{-1}\left(\frac{4x}{3}\right)$

(8) Mennyi $\int \frac{1}{x^5} + \frac{1}{5x^2} + \sqrt[3]{(5x)^2}\,dx$?

      A) $\frac{3x^{5/3}}{\sqrt[3]{5}} - \frac{1}{4x^4} - \frac{1}{5x}$, B) $35^{2/3}x^{5/3} - \frac{1}{4x^4} - \frac{1}{25x}$, C) $\frac{3x^{5/3}}{\sqrt[3]{5}} + \frac{1}{4x^4} + \frac{1}{25x}$, D) $\frac{3x^{5/3}}{\sqrt[3]{5}} - \frac{1}{6x^4} - \frac{1}{25x}$, E) 13.2

(9) Mennyi $\int x^3 \cos(5x^4)\,dx$?

      A) $\frac{1}{5}x\sin(5x) + \frac{1}{25}\cos(5x)$, B) $\frac{3\sin\left(x^4\right)}{4}$, C) $\frac{1}{15}x\sin(5x) + \frac{1}{75}\cos(5x)$, D) $\frac{1}{15}\sin\left(5x^3\right)$, E) $\frac{1}{20}\sin\left(5x^4\right)$

(10) Mennyi $\int x^3 \log(3x)\,dx$?

      A) $\frac{3}{4}x^4\log(3x) - \frac{3x^4}{16}$, B) $\frac{1}{4}x^4\log(x) - \frac{x^4}{16}$, C) $\frac{1}{5}x^5\log(3x) - \frac{x^5}{25}$, D) $\frac{1}{3}x^3\log(3x) - \frac{x^3}{9}$, E) $\frac{1}{4}x^4\log(3x) - \frac{x^4}{16}$

(11) Mennyi $\int (4+4x)\sin(2x)\,dx$?

      A) $\sin(2x) - 2x\cos(2x) - 2\cos(2x)$

      B) $2x\sin(2x) - \cos(2x)$

      C) $-\sin(2x) + 2x\cos(2x) - 2\cos(2x)$

      D) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x) - 2\cos(2x)$

      E) $\frac{1}{2}\sin(2x) - x\cos(2x) - \cos(2x)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.49. **No.49.**

(1) Mennyi $\int x^3 \log(4x)\,dx$?

   A) $\frac{1}{5}x^5 \log(4x) - \frac{x^5}{25}$, B) $\frac{1}{4}x^4 \log(x) - \frac{x^4}{16}$, C) $\frac{1}{4}x^4 \log(4x) - \frac{x^4}{16}$, D) $\frac{1}{3}x^3 \log(4x) - \frac{x^3}{9}$, E) $x^4 \log(4x) - \frac{x^4}{4}$

(2) Mennyi $\int_{-3}^{-2} f(x)\,dx$, ha $f(x) = \begin{cases} 4 & \text{if } x < 0 \\ 1 + 2x & \text{if } x > 0. \end{cases}$?

   A) 0, B) 2, C) 1, D) -1, E) 4

(3) Mennyi $\int \frac{3}{5^2 + 2^2 x} + \sin(2x) + e^{-5x}\,dx$?

   A) $-\frac{e^{-5x}}{5} - \frac{1}{2}\cos(2x) + \frac{3}{10}\tan^{-1}\left(\frac{2x}{5}\right)$
   B) $-\frac{e^{-5x}}{5} - \frac{1}{2}\sin(2x) + \frac{3}{5}\tan^{-1}\left(\frac{2x}{5}\right)$
   C) $-\frac{e^{-5x}}{5} + \frac{1}{2}\cos(2x) + \frac{3}{10}\tan^{-1}\left(\frac{2x}{5}\right)$
   D) $-\frac{e^{-5x}}{5} - \frac{1}{2}\cos(2x) + \frac{3}{4}\tan^{-1}\left(\frac{2x}{5}\right)$
   E) $-e^{-5x} - \frac{1}{2}\cos(2x) + \frac{3}{10}\tan^{-1}\left(\frac{2x}{5}\right)$

(4) Mennyi $\int (3 + 5x)\sin(2x)\,dx$?

   A) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x) - \frac{3}{2}\cos(2x)$
   B) $\frac{5}{8}\sin(2x) - \frac{3}{2}\cos^2(x) - \frac{5}{4}x\cos(2x)$
   C) $\frac{5}{2}x\sin(2x) - \frac{1}{4}\cos(2x)$
   D) $-\frac{5}{4}\sin(2x) + \frac{5}{2}x\cos(2x) - \frac{3}{2}\cos(2x)$
   E) $\frac{5}{4}\sin(2x) - \frac{5}{2}x\cos(2x) - \frac{3}{2}\cos(2x)$

(5) Keresd meg az $f(x) = x^2 - 15x + 33$ es az $g(x) = 4x + 5$ fuggvenyek altal bezart teruletet!

   A) $\frac{9}{2}$, B) $\frac{1}{2}$, C) $\frac{3}{2}$, D) $\frac{7}{2}$, E) $\frac{5}{2}$

(6) Mennyi $\int x^2 \sin(5x^3)\,dx$?

   A) $-\frac{1}{3}\cos\left(x^3\right)$
   B) $-\frac{1}{10}\cos\left(5x^2\right)$
   C) 13.2
   D) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x)$
   E) $-\frac{1}{15}\cos\left(5x^3\right)$

(7) Mennyi $\int \frac{1}{x^4} + \frac{1}{4x^4} + \sqrt[5]{(5x)^4}\,dx$?

   A) $\frac{5}{9}5^{4/5}x^{9/5} + \frac{257}{768x^3}$, B) $\frac{5}{9}5^{4/5}x^{9/5} - \frac{773}{3840x^3}$, C) $\frac{5}{9}5^{4/5}x^{9/5} - \frac{65}{192x^3}$, D) $\frac{25}{9}5^{4/5}x^{9/5} - \frac{257}{768x^3}$, E) $\frac{5}{9}5^{4/5}x^{9/5} - \frac{5}{12x^3}$

(8) Mennyi $\int x^4 \cos(5x^5)\,dx$?

   A) $\frac{1}{25}\sin\left(5x^5\right)$, B) $\frac{1}{20}\sin\left(5x^4\right)$, C) $\frac{1}{5}x\sin(5x) + \frac{1}{25}\cos(5x)$, D) $\frac{1}{20}x\sin(5x) + \frac{1}{100}\cos(5x)$, E) $\frac{4\sin\left(x^5\right)}{5}$

(9) Mennyi $\int \frac{4x+4}{1+4x^2}\,dx$?

   A) $2\log(2x+1) - 6\log(1-2x)$
   B) $2\log\left(4x^2+1\right) + 8\tan^{-1}(2x)$
   C) $\frac{1}{2}\log(-4(2x+1)) - \frac{3}{2}\log(4(2x-1))$
   D) $\frac{1}{2}\log\left(4x^2+1\right) + 2\tan^{-1}(2x)$
   E) $\frac{1}{2}\log\left(4x^2+1\right) - 2\tan^{-1}(2x)$

(10) Mennyi $\int_{-4}^{0} f(x)\,dx$, ha $f(x) = \begin{cases} 1 + 2x & \text{if } x < 0 \\ 3 & \text{if } x > 0. \end{cases}$?

   A) 12, B) 7, C) 8, D) 10, E) 9

(11) $y' = 2x^2 + 4x + 1$, $y(2) = 4$. Mennyi $y(10)$?

   A) $\frac{2572}{3}$, B) $\frac{2566}{3}$, C) $\frac{2596}{3}$, D) $\frac{2569}{3}$, E) $\frac{2575}{3}$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.50. No.50.

(1) Keresd meg az $f(x) = x^2 - 12x + 15$ es az $g(x) = 5x + 3$ fuggvenyek altal bezart teruletet!

   A) $\frac{5}{6}$, B) $\frac{7}{6}$, C) $\frac{1}{6}$, D) $\frac{13}{6}$, E) $\frac{11}{6}$

(2) Mennyi $\int \frac{1}{x^5} + \frac{1}{5x^3} + \sqrt[5]{(2x)^5}\, dx$?

   A) $-\frac{1}{6x^4} + x^2 - \frac{1}{250x^2}$, B) $-\frac{1}{4x^4} + x^2 - \frac{1}{50x^2}$, C) $\frac{1}{4x^4} + x^2 + \frac{1}{250x^2}$, D) $-\frac{1}{4x^4} + 2x^2 - \frac{1}{250x^2}$, E) $-\frac{1}{4x^4} + x^2 - \frac{1}{10x^2}$

(3) Mennyi $\int x^4 \sin(2x^5)\, dx$?

   A) $-\frac{1}{8} \cos\left(2x^4\right)$
   B) $-\frac{1}{5} \cos\left(x^5\right)$
   C) 13.2
   D) $\frac{1}{4} \sin(2x) - \frac{1}{2} x \cos(2x)$
   E) $-\frac{1}{10} \cos\left(2x^5\right)$

(4) Mennyi $\int_{-3}^{0} f(x)\, dx$, ha $f(x) = \begin{cases} 2 + 1x & \text{if } x < 0 \\ 2 & \text{if } x > 0. \end{cases}$?

   A) 1, B) 6, C) 4, D) 3, E) 2

(5) Mennyi $\int \frac{4}{4^2 + 4^2 x} + \sin(5x) + e^{-4x}\, dx$?

   A) $-\frac{e^{-4x}}{4} - \frac{1}{5} \cos(5x) + \frac{1}{4} \tan^{-1}(x)$
   B) $-e^{-4x} - \frac{1}{5} \cos(5x) + \frac{1}{4} \tan^{-1}(x)$
   C) $-\frac{e^{-4x}}{4} + \frac{1}{5} \cos(5x) + \frac{1}{4} \tan^{-1}(x)$
   D) 13.2
   E) $-\frac{e^{-4x}}{4} - \frac{1}{5} \sin(5x) + \tan^{-1}(x)$

(6) $y' = 2x^2 + 2x + 2$, $y(1) = 4$. Mennyi $y(10)$?

   A) 780, B) 777, C) 781, D) 787, E) 783

(7) Mennyi $\int \frac{2x+3}{1+4x^2}\, dx$?

   A) $\frac{1}{4} \log\left(4x^2 + 1\right) - \frac{3}{2} \tan^{-1}(2x)$
   B) $\frac{1}{4} \log\left(4x^2 + 1\right) + \frac{3}{2} \tan^{-1}(2x)$
   C) $\log\left(4x^2 + 1\right) + 6 \tan^{-1}(2x)$
   D) $\frac{1}{2} \log(-3(2x + 1)) - \log(3(2x - 1))$
   E) $2 \log(-12(2x + 1)) - 4 \log(12(2x - 1))$

(8) Mennyi $\int (3 + 5x) \sin(5x)\, dx$?

   A) $x \sin(5x) - \frac{2}{5} \cos(5x)$
   B) $-\frac{1}{5} \sin(5x) + x \cos(5x) - \frac{3}{5} \cos(5x)$
   C) $\frac{1}{25} \sin(5x) - \frac{1}{5} x \cos(5x) - \frac{3}{25} \cos(5x)$
   D) $\frac{1}{5} \sin(5x) - x \cos(5x) - \frac{3}{5} \cos(5x)$
   E) $\frac{1}{25} \sin(5x) - \frac{1}{5} x \cos(5x) - \frac{3}{5} \cos(5x)$

(9) Mennyi $\int x^5 \log(4x)\, dx$?

   A) $\frac{1}{5} x^5 \log(4x) - \frac{x^5}{25}$, B) $\frac{1}{6} x^6 \log(x) - \frac{x^6}{36}$, C) $\frac{1}{6} x^6 \log(4x) - \frac{x^6}{36}$, D) $\frac{2}{3} x^6 \log(4x) - \frac{x^6}{9}$, E) $\frac{1}{7} x^7 \log(4x) - \frac{x^7}{49}$

(10) Mennyi $\int_{-4}^{3} f(x)\, dx$, ha $f(x) = \begin{cases} 3 & \text{if } x < 0 \\ 3 + 2x & \text{if } x > 0. \end{cases}$?

   A) 25, B) 26, C) 28, D) 30, E) 27

(11) Mennyi $\int x^3 \cos(3x^4)\, dx$?

   A) $\frac{1}{9} x \sin(3x) + \frac{1}{27} \cos(3x)$, B) $\frac{1}{9} \sin\left(3x^3\right)$, C) $\frac{1}{3} x \sin(3x) + \frac{1}{9} \cos(3x)$, D) $\frac{3 \sin\left(x^4\right)}{4}$, E) $\frac{1}{12} \sin\left(3x^4\right)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.51. **No.51.**

(1) Mennyi $\int x^2 \log(2x)\, dx$?

  A) $\frac{1}{3}x^3 \log(x) - \frac{x^3}{9}$, B) $\frac{1}{3}x^3 \log(2x) - \frac{x^3}{9}$, C) $\frac{1}{2}x^2 \log(2x) - \frac{x^2}{4}$, D) $\frac{1}{4}x^4 \log(2x) - \frac{x^4}{16}$, E) $\frac{2}{3}x^3 \log(2x) - \frac{2x^3}{9}$

(2) Mennyi $\int (4+2x)\sin(2x)\, dx$?

  A) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x) - 2\cos(2x)$
  B) $\frac{1}{2}\sin(2x) - x\cos(2x) - 2\cos(2x)$
  C) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x) - \cos(2x)$
  D) $x\sin(2x) - \frac{3}{2}\cos(2x)$
  E) $-\frac{1}{2}\sin(2x) + x\cos(2x) - 2\cos(2x)$

(3) Mennyi $\int \frac{1}{x^3} + \frac{1}{4x^3} + \sqrt[5]{(2x)^3}\, dx$?

  A) $\frac{5x^{8/5}}{42^{2/5}} - \frac{17}{32x^2}$, B) $\frac{5x^{8/5}}{22^{2/5}} - \frac{65}{128x^2}$, C) $\frac{5x^{8/5}}{42^{2/5}} - \frac{33}{128x^2}$, D) $\frac{5x^{8/5}}{42^{2/5}} - \frac{5}{8x^2}$, E) $\frac{5x^{8/5}}{42^{2/5}} + \frac{65}{128x^2}$

(4) Keresd meg az $f(x) = x^2 - 17x + 51$ es az $g(x) = 2x + 1$ fuggvenyek altal bezart teruletet!

  A) $\frac{125}{6}$, B) $\frac{101}{6}$, C) $\frac{65}{6}$, D) $\frac{89}{6}$, E) $\frac{95}{6}$

(5) $y' = 4x^2 + 1x + 5$, $y(3) = 5$. Mennyi $y(10)$?

  A) $\frac{8297}{6}$, B) $\frac{8243}{6}$, C) $\frac{8261}{6}$, D) $\frac{8267}{6}$, E) $\frac{8237}{6}$

(6) Mennyi $\int_{-1}^{0} f(x)\, dx$, ha $f(x) = \begin{cases} 3+4x & \text{if } x < 0 \\ 2 & \text{if } x > 0. \end{cases}$?

  A) 2, B) 0, C) -3, D) -1, E) -2

(7) Mennyi $\int x^5 \cos(3x^6)\, dx$?

  A) $\frac{1}{15}x\sin(3x) + \frac{1}{45}\cos(3x)$, B) $\frac{1}{3}x\sin(3x) + \frac{1}{9}\cos(3x)$, C) $\frac{1}{15}\sin\left(3x^5\right)$, D) $\frac{1}{18}\sin\left(3x^6\right)$, E) $\frac{5\sin\left(x^6\right)}{6}$

(8) Mennyi $\int \frac{4x+2}{1+4x^2}\, dx$?

  A) $\frac{1}{2}\log\left(4x^2+1\right) - \tan^{-1}(2x)$
  B) $2\log\left(4x^2+1\right) + 4\tan^{-1}(2x)$
  C) $-\log(1-2x)$
  D) $-4\log(1-2x)$
  E) $\frac{1}{2}\log\left(4x^2+1\right) + \tan^{-1}(2x)$

(9) Mennyi $\int x^4 \sin(2x^5)\, dx$?

  A) $-\frac{1}{5}\cos\left(x^5\right)$
  B) 13.2
  C) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x)$
  D) $-\frac{1}{10}\cos\left(2x^5\right)$
  E) $-\frac{1}{8}\cos\left(2x^4\right)$

(10) Mennyi $\int_{-4}^{-3} f(x)\, dx$, ha $f(x) = \begin{cases} 4 & \text{if } x < 0 \\ 1+5x & \text{if } x > 0. \end{cases}$?

  A) -1, B) 2, C) 4, D) 0, E) 1

(11) Mennyi $\int \frac{3}{5^2+2^2x} + \sin(2x) + e^{-2x}\, dx$?

  A) $-e^{-2x} - \frac{1}{2}\cos(2x) + \frac{3}{10}\tan^{-1}\left(\frac{2x}{5}\right)$
  B) $-\frac{e^{-2x}}{2} - \frac{1}{2}\cos(2x) + \frac{3}{10}\tan^{-1}\left(\frac{2x}{5}\right)$
  C) $-\frac{e^{-2x}}{2} - \frac{1}{2}\cos(2x) + \frac{3}{4}\tan^{-1}\left(\frac{2x}{5}\right)$
  D) $-\frac{e^{-2x}}{2} - \frac{1}{2}\sin(2x) + \frac{3}{5}\tan^{-1}\left(\frac{2x}{5}\right)$
  E) $-\frac{e^{-2x}}{2} + \frac{1}{2}\cos(2x) + \frac{3}{10}\tan^{-1}\left(\frac{2x}{5}\right)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.52. **No.52.**

(1) $y' = 2x^2 + 1x + 2$, $y(3) = 4$. Mennyi $y(10)$?

    A) $\frac{4225}{6}$, B) $\frac{4219}{6}$, C) $\frac{4273}{6}$, D) $\frac{4213}{6}$, E) $\frac{4231}{6}$

(2) Mennyi $\int x^4 \cos(2x^5)\, dx$?

    A) $\frac{1}{8}x \sin(2x) + \frac{1}{16}\cos(2x)$, B) $\frac{1}{8}\sin\left(2x^4\right)$, C) $\frac{4\sin\left(x^5\right)}{5}$, D) $\frac{1}{2}x\sin(2x) + \frac{1}{4}\cos(2x)$, E) $\frac{1}{10}\sin\left(2x^5\right)$

(3) Keresd meg az $f(x) = x^2 - 19x + 53$ es az $g(x) = 4x + 3$ fuggvenyek altal bezart teruletet!

    A) $\frac{125}{6}$, B) $\frac{83}{6}$, C) $\frac{65}{6}$, D) $\frac{71}{6}$, E) $\frac{95}{6}$

(4) Mennyi $\int_{-3}^{5} f(x)\, dx$, ha $f(x) = \begin{cases} 1 + 3x & \text{if } x < 0 \\ 1 & \text{if } x > 0. \end{cases}$?

    A) $\frac{85}{2}$, B) $\frac{89}{2}$, C) $\frac{83}{2}$, D) $\frac{91}{2}$, E) $\frac{87}{2}$

(5) Mennyi $\int \frac{2}{3^2 + 5^2 x} + \sin(3x) + e^{-5x}\, dx$?

    A) $-\frac{e^{-5x}}{5} - \frac{1}{3}\cos(3x) + \frac{2}{25}\tan^{-1}\left(\frac{5x}{3}\right)$
    B) $-e^{-5x} - \frac{1}{3}\cos(3x) + \frac{2}{15}\tan^{-1}\left(\frac{5x}{3}\right)$
    C) $-\frac{e^{-5x}}{5} - \frac{1}{3}\sin(3x) + \frac{2}{3}\tan^{-1}\left(\frac{5x}{3}\right)$
    D) $-\frac{e^{-5x}}{5} - \frac{1}{3}\cos(3x) + \frac{2}{15}\tan^{-1}\left(\frac{5x}{3}\right)$
    E) $-\frac{e^{-5x}}{5} + \frac{1}{3}\cos(3x) + \frac{2}{15}\tan^{-1}\left(\frac{5x}{3}\right)$

(6) Mennyi $\int_{-4}^{2} f(x)\, dx$, ha $f(x) = \begin{cases} 1 & \text{if } x < 0 \\ 5 + 2x & \text{if } x > 0. \end{cases}$?

    A) 15, B) 14, C) 16, D) 18, E) 13

(7) Mennyi $\int \frac{3x+5}{1+4x^2}\, dx$?

    A) $\frac{7}{8}\log(-5(2x+1)) - \frac{13}{8}\log(5(2x-1))$
    B) $\frac{7}{2}\log(-5(2x+1)) - \frac{13}{2}\log(5(2x-1))$
    C) $\frac{3}{8}\log\left(4x^2+1\right) - \frac{5}{2}\tan^{-1}(2x)$
    D) $\frac{3}{2}\log\left(4x^2+1\right) + 10\tan^{-1}(2x)$
    E) $\frac{3}{8}\log\left(4x^2+1\right) + \frac{5}{2}\tan^{-1}(2x)$

(8) Mennyi $\int \frac{1}{x^3} + \frac{1}{2x^3} + \sqrt[3]{(3x)^5}\, dx$?

    A) $\frac{9}{8}3^{2/3}x^{8/3} - \frac{5}{16x^2}$, B) $\frac{27}{8}3^{2/3}x^{8/3} - \frac{9}{16x^2}$, C) $\frac{9}{8}3^{2/3}x^{8/3} - \frac{3}{4x^2}$, D) $\frac{9}{8}3^{2/3}x^{8/3} + \frac{9}{16x^2}$, E) $\frac{9}{8}3^{2/3}x^{8/3} - \frac{5}{8x^2}$

(9) Mennyi $\int x^3 \log(4x)\, dx$?

    A) $\frac{1}{5}x^5 \log(4x) - \frac{x^5}{25}$, B) $\frac{1}{4}x^4 \log(4x) - \frac{x^4}{16}$, C) $\frac{1}{4}x^4 \log(x) - \frac{x^4}{16}$, D) $x^4 \log(4x) - \frac{x^4}{4}$, E) $\frac{1}{3}x^3 \log(4x) - \frac{x^3}{9}$

(10) Mennyi $\int x^5 \sin(4x^6)\, dx$?

    A) 13.2
    B) $-\frac{1}{6}\cos\left(x^6\right)$
    C) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x)$
    D) $-\frac{1}{20}\cos\left(4x^5\right)$
    E) $-\frac{1}{24}\cos\left(4x^6\right)$

(11) Mennyi $\int (2 + 2x)\sin(3x)\, dx$?

    A) $\frac{2}{9}\sin(3x) - \frac{2}{3}x\cos(3x) - \frac{2}{3}\cos(3x)$
    B) $\frac{2}{27}\sin(3x) - \frac{2}{9}x\cos(3x) - \frac{2}{9}\cos(3x)$
    C) $-\frac{2}{9}\sin(3x) + \frac{2}{3}x\cos(3x) - \frac{2}{3}\cos(3x)$
    D) $\frac{2}{3}x\sin(3x) - \frac{4}{9}\cos(3x)$
    E) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x) - \frac{2}{3}\cos(3x)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.53. **No.53.**

(1) Mennyi $\int_{-3}^{-2} f(x)\,dx$, ha $f(x) = \begin{cases} 3+2x & \text{if } x < 0 \\ 4 & \text{if } x > 0. \end{cases}$?

A) 2, B) 0, C) 3, D) 1, E) 4

(2) Mennyi $\int \frac{1}{x^3} + \frac{1}{3x^4} + \sqrt[4]{(5x)^5}\,dx$?

A) $\frac{20}{9}\sqrt[4]{5}x^{9/4} - \frac{1}{9x^3} - \frac{1}{2x^2}$, B) $\frac{20}{9}\sqrt[4]{5}x^{9/4} - \frac{1}{81x^3} - \frac{1}{2x^2}$, C) $\frac{20}{9}\sqrt[4]{5}x^{9/4} - \frac{1}{243x^3} - \frac{1}{4x^2}$, D) $\frac{100}{9}\sqrt[4]{5}x^{9/4} - \frac{1}{243x^3} - \frac{1}{2x^2}$, E) $\frac{20}{9}\sqrt[4]{5}x^{9/4} + \frac{1}{243x^3} + \frac{1}{2x^2}$

(3) Mennyi $\int \frac{3x+2}{1+4x^2}\,dx$?

A) $\frac{3}{8}\log\left(4x^2+1\right) - \tan^{-1}(2x)$

B) $\frac{3}{8}\log\left(4x^2+1\right) + \tan^{-1}(2x)$

C) $\frac{1}{8}\log(-2(2x+1)) - \frac{7}{8}\log(2(2x-1))$

D) $\frac{1}{2}\log(-8(2x+1)) - \frac{7}{2}\log(8(2x-1))$

E) $\frac{3}{2}\log\left(4x^2+1\right) + 4\tan^{-1}(2x)$

(4) Mennyi $\int (4+5x)\sin(4x)\,dx$?

A) $\frac{5}{4}x\sin(4x) - \frac{11}{16}\cos(4x)$

B) $-\frac{5}{16}\sin(4x) + \frac{5}{4}x\cos(4x) - \cos(4x)$

C) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x) - \cos(4x)$

D) $\frac{5}{16}\sin(4x) - \frac{5}{4}x\cos(4x) - \cos(4x)$

E) $\frac{5}{64}\sin(4x) - \frac{5}{16}x\cos(4x) - \frac{1}{4}\cos(4x)$

(5) Mennyi $\int x^5 \cos(3x^6)\,dx$?

A) $\frac{1}{18}\sin\left(3x^6\right)$, B) $\frac{1}{3}x\sin(3x) + \frac{1}{9}\cos(3x)$, C) $\frac{1}{15}\sin\left(3x^5\right)$, D) $\frac{1}{15}x\sin(3x) + \frac{1}{45}\cos(3x)$, E) $\frac{5\sin\left(x^6\right)}{6}$

(6) Mennyi $\int x^3 \log(5x)\,dx$?

A) $\frac{1}{5}x^5\log(5x) - \frac{x^5}{25}$, B) $\frac{1}{3}x^3\log(5x) - \frac{x^3}{9}$, C) $\frac{5}{4}x^4\log(5x) - \frac{5x^4}{16}$, D) $\frac{1}{4}x^4\log(x) - \frac{x^4}{16}$, E) $\frac{1}{4}x^4\log(5x) - \frac{x^4}{16}$

(7) Mennyi $\int \frac{2}{4^2+3^2x} + \sin(2x) + e^{-5x}\,dx$?

A) $-\frac{e^{-5x}}{5} + \frac{1}{2}\cos(2x) + \frac{1}{6}\tan^{-1}\left(\frac{3x}{4}\right)$

B) $-\frac{e^{-5x}}{5} - \frac{1}{2}\cos(2x) + \frac{1}{6}\tan^{-1}\left(\frac{3x}{4}\right)$

C) $-\frac{e^{-5x}}{5} - \frac{1}{2}\cos(2x) + \frac{2}{9}\tan^{-1}\left(\frac{3x}{4}\right)$

D) $-e^{-5x} - \frac{1}{2}\cos(2x) + \frac{1}{6}\tan^{-1}\left(\frac{3x}{4}\right)$

E) $-\frac{e^{-5x}}{5} - \frac{1}{2}\sin(2x) + \frac{1}{2}\tan^{-1}\left(\frac{3x}{4}\right)$

(8) $y' = 2x^2 + 4x + 2$, $y(1) = 4$. Mennyi $y(10)$?

A) 877, B) 884, C) 886, D) 880, E) 882

(9) Keresd meg az $f(x) = x^2 - 13x + 17$ es az $g(x) = 5x + 2$ fuggvenyek altal bezart teruletet!

A) $\frac{1}{3}$, B) $\frac{7}{3}$, C) $\frac{5}{3}$, D) $\frac{2}{3}$, E) $\frac{4}{3}$

(10) Mennyi $\int x^4 \sin(3x^5)\,dx$?

A) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x)$

B) 13.2

C) $-\frac{1}{15}\cos\left(3x^5\right)$

D) $-\frac{1}{5}\cos\left(x^5\right)$

E) $-\frac{1}{12}\cos\left(3x^4\right)$

(11) Mennyi $\int_{-4}^{-3} f(x)\,dx$, ha $f(x) = \begin{cases} 4 & \text{if } x < 0 \\ 5+2x & \text{if } x > 0. \end{cases}$?

A) 3, B) 4, C) 2, D) 1, E) -1

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.54. **No.54.**

(1) Mennyi $\int \frac{3}{4^2+5^2x} + \sin(5x) + e^{-4x}\,dx$?

     A) $-\frac{e^{-4x}}{4} - \frac{1}{5}\cos(5x) + \frac{3}{20}\tan^{-1}\left(\frac{5x}{4}\right)$
     B) $-\frac{e^{-4x}}{4} - \frac{1}{5}\cos(5x) + \frac{3}{25}\tan^{-1}\left(\frac{5x}{4}\right)$
     C) $-\frac{e^{-4x}}{4} + \frac{1}{5}\cos(5x) + \frac{3}{20}\tan^{-1}\left(\frac{5x}{4}\right)$
     D) $-\frac{e^{-4x}}{4} - \frac{1}{5}\sin(5x) + \frac{3}{4}\tan^{-1}\left(\frac{5x}{4}\right)$
     E) $-e^{-4x} - \frac{1}{5}\cos(5x) + \frac{3}{20}\tan^{-1}\left(\frac{5x}{4}\right)$

(2) Mennyi $\int \frac{5x+2}{1+1x^2}\,dx$?

     A) 13.2
     B) $\frac{5}{2}\log\left(x^2+1\right) + 2\tan^{-1}(x)$
     C) $\frac{5}{2}\log\left(x^2+1\right) - 2\tan^{-1}(x)$
     D) 17.3
     E) $-\frac{7}{2}\log(2(x-1)) - \frac{3}{2}\log(-2(x+1))$

(3) Mennyi $\int (2+3x)\sin(5x)\,dx$?

     A) $-\frac{3}{25}\sin(5x) + \frac{3}{5}x\cos(5x) - \frac{2}{5}\cos(5x)$
     B) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \frac{2}{5}\cos(5x)$
     C) $\frac{3}{125}\sin(5x) - \frac{3}{25}x\cos(5x) - \frac{2}{25}\cos(5x)$
     D) $\frac{3}{5}x\sin(5x) - \frac{7}{25}\cos(5x)$
     E) $\frac{3}{25}\sin(5x) - \frac{3}{5}x\cos(5x) - \frac{2}{5}\cos(5x)$

(4) Mennyi $\int_{-2}^{5} f(x)\,dx$, ha $f(x) = \begin{cases} 2+3x & \text{if } x < 0 \\ 1 & \text{if } x > 0. \end{cases}$?

     A) $\frac{89}{2}$, B) $\frac{91}{2}$, C) $\frac{95}{2}$, D) $\frac{93}{2}$, E) $\frac{99}{2}$

(5) Mennyi $\int x^3 \log(2x)\,dx$?

     A) $\frac{1}{4}x^4\log(x) - \frac{x^4}{16}$, B) $\frac{1}{2}x^4\log(2x) - \frac{x^4}{8}$, C) $\frac{1}{5}x^5\log(2x) - \frac{x^5}{25}$, D) $\frac{1}{3}x^3\log(2x) - \frac{x^3}{9}$, E) $\frac{1}{4}x^4\log(2x) - \frac{x^4}{16}$

(6) Mennyi $\int \frac{1}{x^2} + \frac{1}{5x^3} + \sqrt[2]{(3x)^2}\,dx$?

     A) $\frac{9x^2}{2} - \frac{1}{250x^2} - \frac{1}{x}$, B) $\frac{3x^2}{2} - \frac{1}{10x^2} - \frac{1}{x}$, C) $\frac{3x^2}{2} + \frac{1}{250x^2} + \frac{1}{x}$, D) $\frac{3x^2}{2} - \frac{1}{50x^2} - \frac{1}{x}$, E) $\frac{3x^2}{2} - \frac{1}{250x^2} - \frac{1}{3x}$

(7) Mennyi $\int_{-1}^{4} f(x)\,dx$, ha $f(x) = \begin{cases} 1 & \text{if } x < 0 \\ 4+3x & \text{if } x > 0. \end{cases}$?

     A) 39, B) 38, C) 37, D) 41, E) 36

(8) $y' = 1x^2 + 1x + 1$, $y(4) = 5$. Mennyi $y(10)$?

     A) 357, B) 358, C) 365, D) 360, E) 361

(9) Mennyi $\int x^5 \sin(2x^6)\,dx$?

     A) $-\frac{1}{12}\cos\left(2x^6\right)$
     B) 13.2
     C) $-\frac{1}{10}\cos\left(2x^5\right)$
     D) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x)$
     E) $-\frac{1}{6}\cos\left(x^6\right)$

(10) Mennyi $\int x^4 \cos(2x^5)\,dx$?

     A) $\frac{1}{2}x\sin(2x) + \frac{1}{4}\cos(2x)$, B) $\frac{1}{10}\sin\left(2x^5\right)$, C) $\frac{4\sin\left(x^5\right)}{5}$, D) $\frac{1}{8}\sin\left(2x^4\right)$, E) $\frac{1}{8}x\sin(2x) + \frac{1}{16}\cos(2x)$

(11) Keresd meg az $f(x) = x^2 - 10x + 24$ es az $g(x) = 1x + 4$ fuggvenyek altal bezart teruletet!

     A) $\frac{11}{6}$, B) $\frac{13}{6}$, C) $\frac{7}{6}$, D) $\frac{1}{6}$, E) $\frac{5}{6}$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.55. **No.55.**

(1) Mennyi $\int x^2 \cos(5x^3)\, dx$?

A) $\frac{1}{15}\sin\left(5x^3\right)$, B) $\frac{1}{10}x\sin(5x) + \frac{1}{50}\cos(5x)$, C) $\frac{1}{5}x\sin(5x) + \frac{1}{25}\cos(5x)$, D) $\frac{2\sin\left(x^3\right)}{3}$, E) $\frac{1}{10}\sin\left(5x^2\right)$

(2) Mennyi $\int x^4 \log(4x)\, dx$?

A) $\frac{1}{6}x^6\log(4x) - \frac{x^6}{36}$, B) $\frac{1}{5}x^5\log(4x) - \frac{x^5}{25}$, C) $\frac{1}{4}x^4\log(4x) - \frac{x^4}{16}$, D) $\frac{1}{5}x^5\log(x) - \frac{x^5}{25}$, E) $\frac{4}{5}x^5\log(4x) - \frac{4x^5}{25}$

(3) Mennyi $\int \frac{5}{2^2 + 2^2 x} + \sin(2x) + e^{-5x}\, dx$?

A) $-\frac{e^{-5x}}{5} - \frac{1}{2}\cos(2x) + \frac{5}{4}\tan^{-1}(x)$
B) $-e^{-5x} - \frac{1}{2}\cos(2x) + \frac{5}{4}\tan^{-1}(x)$
C) $-\frac{e^{-5x}}{5} - \frac{1}{2}\sin(2x) + \frac{5}{2}\tan^{-1}(x)$
D) $-\frac{e^{-5x}}{5} + \frac{1}{2}\cos(2x) + \frac{5}{4}\tan^{-1}(x)$
E) 13.2

(4) Mennyi $\int_{-1}^{4} f(x)\, dx$, ha $f(x) = \begin{cases} 1 + 2x & \text{if } x < 0 \\ 3 & \text{if } x > 0. \end{cases}$?

A) 23, B) 21, C) 20, D) 19, E) 18

(5) Mennyi $\int \frac{1}{x^3} + \frac{1}{4x^2} + \sqrt[4]{(3x)^4}\, dx$?

A) 13.2, B) $\frac{3x^2}{2} + \frac{1}{2x^2} + \frac{1}{16x}$, C) $\frac{3x^2}{2} - \frac{1}{4x^2} - \frac{1}{16x}$, D) $\frac{9x^2}{2} - \frac{1}{2x^2} - \frac{1}{16x}$, E) $\frac{3x^2}{2} - \frac{1}{2x^2} - \frac{1}{4x}$

(6) Mennyi $\int \frac{2x+2}{1+9x^2}\, dx$?

A) $2\log(3x+1) - 4\log(1-3x)$
B) $\frac{1}{9}\log\left(9x^2+1\right) + \frac{2}{3}\tan^{-1}(3x)$
C) $\log\left(9x^2+1\right) + 6\tan^{-1}(3x)$
D) $\frac{1}{9}\log\left(9x^2+1\right) - \frac{2}{3}\tan^{-1}(3x)$
E) $\frac{2}{9}\log(-2(3x+1)) - \frac{4}{9}\log(2(3x-1))$

(7) Keresd meg az $f(x) = x^2 - 8x + 8$ es az $g(x) = 3x + 2$ fuggvenyek altal bezart teruletet!

A) $\frac{1}{6}$, B) $\frac{13}{6}$, C) $\frac{23}{6}$, D) $\frac{19}{6}$, E) $\frac{7}{6}$

(8) Mennyi $\int (5 + 3x)\sin(4x)\, dx$?

A) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x) - \frac{5}{4}\cos(4x)$
B) $-\frac{3}{16}\sin(4x) + \frac{3}{4}x\cos(4x) - \frac{5}{4}\cos(4x)$
C) $\frac{3}{4}x\sin(4x) - \frac{17}{16}\cos(4x)$
D) $\frac{3}{64}\sin(4x) - \frac{3}{16}x\cos(4x) - \frac{5}{16}\cos(4x)$
E) $\frac{3}{16}\sin(4x) - \frac{3}{4}x\cos(4x) - \frac{5}{4}\cos(4x)$

(9) $y' = 4x^2 + 5x + 3$, $y(1) = 5$. Mennyi $y(10)$?

A) $\frac{3211}{2}$, B) $\frac{3223}{2}$, C) $\frac{3203}{2}$, D) $\frac{3221}{2}$, E) $\frac{3213}{2}$

(10) Mennyi $\int x^4 \sin(3x^5)\, dx$?

A) 13.2
B) $-\frac{1}{5}\cos\left(x^5\right)$
C) $-\frac{1}{12}\cos\left(3x^4\right)$
D) $-\frac{1}{15}\cos\left(3x^5\right)$
E) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x)$

(11) Mennyi $\int_{-2}^{-1} f(x)\, dx$, ha $f(x) = \begin{cases} 3 & \text{if } x < 0 \\ 5 + 5x & \text{if } x > 0. \end{cases}$?

A) 1, B) -1, C) 2, D) 3, E) -2

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.56. **No.56.**

(1) Mennyi $\int \frac{3}{5^2+2^2x} + \sin(2x) + e^{-2x}\,dx$?

A) $-e^{-2x} - \frac{1}{2}\cos(2x) + \frac{3}{10}\tan^{-1}\left(\frac{2x}{5}\right)$
B) $-\frac{e^{-2x}}{2} - \frac{1}{2}\cos(2x) + \frac{3}{4}\tan^{-1}\left(\frac{2x}{5}\right)$
C) $-\frac{e^{-2x}}{2} - \frac{1}{2}\sin(2x) + \frac{3}{5}\tan^{-1}\left(\frac{2x}{5}\right)$
D) $-\frac{e^{-2x}}{2} - \frac{1}{2}\cos(2x) + \frac{3}{10}\tan^{-1}\left(\frac{2x}{5}\right)$
E) $-\frac{e^{-2x}}{2} + \frac{1}{2}\cos(2x) + \frac{3}{10}\tan^{-1}\left(\frac{2x}{5}\right)$

(2) Mennyi $\int_{-3}^{6} f(x)\,dx$, ha $f(x) = \begin{cases} 4+2x & \text{if } x<0 \\ 4 & \text{if } x>0. \end{cases}$?

A) 67, B) 68, C) 69, D) 71, E) 72

(3) Mennyi $\int \frac{1}{x^2} + \frac{1}{5x^4} + \sqrt[2]{(3x)^2}\,dx$?

A) $-\frac{1}{1875x^3} + \frac{9x^2}{2} - \frac{1}{x}$, B) $-\frac{1}{1875x^3} + \frac{3x^2}{2} - \frac{1}{3x}$, C) $\frac{1}{1875x^3} + \frac{3x^2}{2} + \frac{1}{x}$, D) $-\frac{1}{375x^3} + \frac{3x^2}{2} - \frac{1}{x}$, E) $-\frac{1}{15x^3} + \frac{3x^2}{2} - \frac{1}{x}$

(4) Mennyi $\int x^3 \sin(3x^4)\,dx$?

A) $-\frac{1}{12}\cos\left(3x^4\right)$
B) 13.2
C) $-\frac{1}{9}\cos\left(3x^3\right)$
D) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x)$
E) $-\frac{1}{4}\cos\left(x^4\right)$

(5) $y' = 4x^2 + 1x + 2$, $y(1) = 1$. Mennyi $y(10)$?
A) $\frac{2801}{2}$, B) $\frac{2785}{2}$, C) $\frac{2783}{2}$, D) $\frac{2789}{2}$, E) $\frac{2781}{2}$

(6) Mennyi $\int x^3 \cos(3x^4)\,dx$?

A) $\frac{1}{9}x\sin(3x) + \frac{1}{27}\cos(3x)$, B) $\frac{3\sin\left(x^4\right)}{4}$, C) $\frac{1}{3}x\sin(3x) + \frac{1}{9}\cos(3x)$, D) $\frac{1}{12}\sin\left(3x^4\right)$, E) $\frac{1}{9}\sin\left(3x^3\right)$

(7) Mennyi $\int_{-3}^{2} f(x)\,dx$, ha $f(x) = \begin{cases} 4 & \text{if } x<0 \\ 1+2x & \text{if } x>0. \end{cases}$?

A) 16, B) 15, C) 18, D) 13, E) 14

(8) Keresd meg az $f(x) = x^2 - 11x + 16$ es az $g(x) = 3x + 4$ fuggvenyek altal bezart teruletet!
A) $\frac{23}{3}$, B) $\frac{20}{3}$, C) $\frac{5}{3}$, D) $\frac{17}{3}$, E) $\frac{32}{3}$

(9) Mennyi $\int x^5 \log(3x)\,dx$?

A) $\frac{1}{6}x^6 \log(x) - \frac{x^6}{36}$, B) $\frac{1}{2}x^6 \log(3x) - \frac{x^6}{12}$, C) $\frac{1}{7}x^7 \log(3x) - \frac{x^7}{49}$, D) $\frac{1}{5}x^5 \log(3x) - \frac{x^5}{25}$, E) $\frac{1}{6}x^6 \log(3x) - \frac{x^6}{36}$

(10) Mennyi $\int \frac{4x+4}{1+9x^2}\,dx$?

A) $\frac{2}{9}\log\left(9x^2 + 1\right) + \frac{4}{3}\tan^{-1}(3x)$
B) $2\log\left(9x^2 + 1\right) + 12\tan^{-1}(3x)$
C) $4\log(3x+1) - 8\log(1-3x)$
D) $\frac{2}{9}\log\left(9x^2 + 1\right) - \frac{4}{3}\tan^{-1}(3x)$
E) $\frac{4}{9}\log(-4(3x+1)) - \frac{8}{9}\log(4(3x-1))$

(11) Mennyi $\int (3+3x)\sin(5x)\,dx$?

A) $-\frac{3}{25}\sin(5x) + \frac{3}{5}x\cos(5x) - \frac{3}{5}\cos(5x)$
B) $\frac{3}{5}x\sin(5x) - \frac{12}{25}\cos(5x)$
C) $\frac{3}{125}\sin(5x) - \frac{3}{25}x\cos(5x) - \frac{3}{25}\cos(5x)$
D) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \frac{3}{5}\cos(5x)$
E) $\frac{3}{25}\sin(5x) - \frac{3}{5}x\cos(5x) - \frac{3}{5}\cos(5x)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.57. **No.57.**

(1) Keresd meg az $f(x) = x^2 - 11x + 24$ es az $g(x) = 1x + 3$ fuggvenyek altal bezart teruletet!
   A) $\frac{5}{3}$, B) $\frac{32}{3}$, C) $\frac{2}{3}$, D) $\frac{8}{3}$, E) $\frac{11}{3}$

(2) Mennyi $\int_{-2}^{1} f(x)\,dx$, ha $f(x) = \begin{cases} 3 & \text{if } x < 0 \\ 4 + 5x & \text{if } x > 0. \end{cases}$?
   A) $\frac{19}{2}$, B) $\frac{17}{2}$, C) $\frac{15}{2}$, D) $\frac{21}{2}$, E) $\frac{25}{2}$

(3) Mennyi $\int x^4 \cos(3x^5)\,dx$?
   A) $\frac{1}{12}\sin\left(3x^4\right)$, B) $\frac{1}{3}x\sin(3x) + \frac{1}{9}\cos(3x)$, C) $\frac{4\sin\left(x^5\right)}{5}$, D) $\frac{1}{15}\sin\left(3x^5\right)$, E) $\frac{1}{12}x\sin(3x) + \frac{1}{36}\cos(3x)$

(4) Mennyi $\int_{-1}^{6} f(x)\,dx$, ha $f(x) = \begin{cases} 4 + 4x & \text{if } x < 0 \\ 3 & \text{if } x > 0. \end{cases}$?
   A) 96, B) 98, C) 94, D) 99, E) 97

(5) $y' = 4x^2 + 3x + 4$, $y(2) = 2$. Mennyi $y(10)$?
   A) $\frac{4475}{3}$, B) $\frac{4472}{3}$, C) $\frac{4478}{3}$, D) $\frac{4481}{3}$, E) $\frac{4502}{3}$

(6) Mennyi $\int (4 + 3x)\sin(5x)\,dx$?
   A) $\frac{3}{125}\sin(5x) - \frac{3}{25}x\cos(5x) - \frac{4}{25}\cos(5x)$
   B) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \frac{4}{5}\cos(5x)$
   C) $-\frac{3}{25}\sin(5x) + \frac{3}{5}x\cos(5x) - \frac{4}{5}\cos(5x)$
   D) $\frac{3}{5}x\sin(5x) - \frac{17}{25}\cos(5x)$
   E) $\frac{3}{25}\sin(5x) - \frac{3}{5}x\cos(5x) - \frac{4}{5}\cos(5x)$

(7) Mennyi $\int x^4 \sin(4x^5)\,dx$?
   A) $-\frac{1}{20}\cos\left(4x^5\right)$
   B) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x)$
   C) 13.2
   D) $-\frac{1}{5}\cos\left(x^5\right)$
   E) $-\frac{1}{16}\cos\left(4x^4\right)$

(8) Mennyi $\int \frac{4x+4}{1+4x^2}\,dx$?
   A) $\frac{1}{2}\log\left(4x^2 + 1\right) - 2\tan^{-1}(2x)$
   B) $2\log(2x + 1) - 6\log(1 - 2x)$
   C) $\frac{1}{2}\log\left(4x^2 + 1\right) + 2\tan^{-1}(2x)$
   D) $2\log\left(4x^2 + 1\right) + 8\tan^{-1}(2x)$
   E) $\frac{1}{2}\log(-4(2x + 1)) - \frac{3}{2}\log(4(2x - 1))$

(9) Mennyi $\int \frac{1}{x^4} + \frac{1}{4x^2} + \sqrt[2]{(5x)^4}\,dx$?
   A) $\frac{25x^3}{3} - \frac{1}{3x^3} - \frac{1}{4x}$, B) $\frac{25x^3}{3} + \frac{1}{3x^3} + \frac{1}{16x}$, C) $\frac{125x^3}{3} - \frac{1}{3x^3} - \frac{1}{16x}$, D) $\frac{25x^3}{3} - \frac{1}{5x^3} - \frac{1}{16x}$, E) 13.2

(10) Mennyi $\int \frac{4}{5^2+4^2x} + \sin(5x) + e^{-4x}\,dx$?
   A) $-\frac{e^{-4x}}{4} - \frac{1}{5}\cos(5x) + \frac{1}{4}\tan^{-1}\left(\frac{4x}{5}\right)$
   B) $-\frac{e^{-4x}}{4} + \frac{1}{5}\cos(5x) + \frac{1}{5}\tan^{-1}\left(\frac{4x}{5}\right)$
   C) $-\frac{e^{-4x}}{4} - \frac{1}{5}\cos(5x) + \frac{1}{5}\tan^{-1}\left(\frac{4x}{5}\right)$
   D) $-\frac{e^{-4x}}{4} - \frac{1}{5}\sin(5x) + \frac{4}{5}\tan^{-1}\left(\frac{4x}{5}\right)$
   E) $-e^{-4x} - \frac{1}{5}\cos(5x) + \frac{1}{5}\tan^{-1}\left(\frac{4x}{5}\right)$

(11) Mennyi $\int x^3 \log(2x)\,dx$?
   A) $\frac{1}{4}x^4\log(2x) - \frac{x^4}{16}$, B) $\frac{1}{2}x^4\log(2x) - \frac{x^4}{8}$, C) $\frac{1}{5}x^5\log(2x) - \frac{x^5}{25}$, D) $\frac{1}{3}x^3\log(2x) - \frac{x^3}{9}$, E) $\frac{1}{4}x^4\log(x) - \frac{x^4}{16}$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.58. **No.58.**

(1) Mennyi $\int x^2 \cos(4x^3)\,dx$?

    A) $\frac{1}{8}x\sin(4x) + \frac{1}{32}\cos(4x)$, B) $\frac{1}{8}\sin\left(4x^2\right)$, C) $\frac{1}{12}\sin\left(4x^3\right)$, D) $\frac{2\sin\left(x^3\right)}{3}$, E) $\frac{1}{4}x\sin(4x) + \frac{1}{16}\cos(4x)$

(2) Mennyi $\int_{-3}^{-2} f(x)\,dx$, ha $f(x) = \begin{cases} 3 & \text{if } x < 0 \\ 5+4x & \text{if } x > 0. \end{cases}$?

    A) -1, B) 3, C) 1, D) 5, E) -2

(3) Mennyi $\int x^4 \sin(4x^5)\,dx$?

    A) $-\frac{1}{5}\cos\left(x^5\right)$
    B) 13.2
    C) $-\frac{1}{20}\cos\left(4x^5\right)$
    D) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x)$
    E) $-\frac{1}{16}\cos\left(4x^4\right)$

(4) $y' = 1x^2 + 5x + 5$, $y(1) = 3$. Mennyi $y(10)$?

    A) $\frac{1241}{2}$, B) $\frac{1257}{2}$, C) $\frac{1237}{2}$, D) $\frac{1243}{2}$, E) $\frac{1239}{2}$

(5) Mennyi $\int \frac{1}{x^3} + \frac{1}{3x^5} + \sqrt[3]{(3x)^2}\,dx$?

    A) $\frac{3}{5}3^{2/3}x^{5/3} - \frac{1}{324x^4} - \frac{1}{2x^2}$, B) $\frac{3}{5}3^{2/3}x^{5/3} - \frac{1}{972x^4} - \frac{1}{4x^2}$, C) $\frac{3}{5}3^{2/3}x^{5/3} + \frac{1}{972x^4} + \frac{1}{2x^2}$, D) $\frac{9}{5}3^{2/3}x^{5/3} - \frac{1}{972x^4} - \frac{1}{2x^2}$, E) $\frac{3}{5}3^{2/3}x^{5/3} - \frac{1}{12x^4} - \frac{1}{2x^2}$

(6) Mennyi $\int \frac{4}{2^2+4^2x} + \sin(2x) + e^{-3x}\,dx$?

    A) $-\frac{e^{-3x}}{3} - \frac{1}{2}\cos(2x) + \frac{1}{2}\tan^{-1}(2x)$
    B) $-\frac{e^{-3x}}{3} - \frac{1}{2}\cos(2x) + \frac{1}{4}\tan^{-1}(2x)$
    C) $-\frac{e^{-3x}}{3} + \frac{1}{2}\cos(2x) + \frac{1}{2}\tan^{-1}(2x)$
    D) $-e^{-3x} - \frac{1}{2}\cos(2x) + \frac{1}{2}\tan^{-1}(2x)$
    E) $-\frac{e^{-3x}}{3} - \frac{1}{2}\sin(2x) + 2\tan^{-1}(2x)$

(7) Mennyi $\int \frac{4x+2}{1+9x^2}\,dx$?

    A) $\frac{2}{9}\log\left(9x^2+1\right) - \frac{2}{3}\tan^{-1}(3x)$
    B) $\frac{1}{9}\log(-2(3x+1)) - \frac{5}{9}\log(2(3x-1))$
    C) $2\log\left(9x^2+1\right) + 6\tan^{-1}(3x)$
    D) $\log(-2(3x+1)) - 5\log(2(3x-1))$
    E) $\frac{2}{9}\log\left(9x^2+1\right) + \frac{2}{3}\tan^{-1}(3x)$

(8) Keresd meg az $f(x) = x^2 - 15x + 32$ es az $g(x) = 4x + 4$ fuggvenyek altal bezart teruletet!

    A) $\frac{3}{2}$, B) $\frac{1}{2}$, C) $\frac{5}{2}$, D) $\frac{7}{2}$, E) $\frac{9}{2}$

(9) Mennyi $\int_{-3}^{-1} f(x)\,dx$, ha $f(x) = \begin{cases} 5+1x & \text{if } x < 0 \\ 3 & \text{if } x > 0. \end{cases}$?

    A) 4, B) 2, C) 3, D) 1, E) 6

(10) Mennyi $\int (4+4x)\sin(5x)\,dx$?

    A) $\frac{4}{25}\sin(5x) - \frac{4}{5}x\cos(5x) - \frac{4}{5}\cos(5x)$
    B) $\frac{4}{125}\sin(5x) - \frac{4}{25}x\cos(5x) - \frac{4}{25}\cos(5x)$
    C) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \frac{4}{5}\cos(5x)$
    D) $\frac{4}{5}x\sin(5x) - \frac{16}{25}\cos(5x)$
    E) $-\frac{4}{25}\sin(5x) + \frac{4}{5}x\cos(5x) - \frac{4}{5}\cos(5x)$

(11) Mennyi $\int x^3 \log(4x)\,dx$?

    A) $\frac{1}{4}x^4\log(4x) - \frac{x^4}{16}$, B) $\frac{1}{5}x^5\log(4x) - \frac{x^5}{25}$, C) $x^4\log(4x) - \frac{x^4}{4}$, D) $\frac{1}{3}x^3\log(4x) - \frac{x^3}{9}$, E) $\frac{1}{4}x^4\log(x) - \frac{x^4}{16}$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.59. **No.59.**

(1) Mennyi $\int x^5 \log(2x)\,dx$?

A) $\frac{1}{6}x^6 \log(2x) - \frac{x^6}{36}$, B) $\frac{1}{3}x^6 \log(2x) - \frac{x^6}{18}$, C) $\frac{1}{5}x^5 \log(2x) - \frac{x^5}{25}$, D) $\frac{1}{6}x^6 \log(x) - \frac{x^6}{36}$, E) $\frac{1}{7}x^7 \log(2x) - \frac{x^7}{49}$

(2) Mennyi $\int x^4 \cos(4x^5)\,dx$?

A) $\frac{1}{4}x \sin(4x) + \frac{1}{16}\cos(4x)$, B) $\frac{1}{16}x \sin(4x) + \frac{1}{64}\cos(4x)$, C) $\frac{4\sin(x^5)}{5}$, D) $\frac{1}{16}\sin(4x^4)$, E) $\frac{1}{20}\sin(4x^5)$

(3) Mennyi $\int (3+5x)\sin(2x)\,dx$?

A) $\frac{5}{8}\sin(2x) - \frac{3}{2}\cos^2(x) - \frac{5}{4}x\cos(2x)$
B) $-\frac{5}{4}\sin(2x) + \frac{5}{2}x\cos(2x) - \frac{3}{2}\cos(2x)$
C) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x) - \frac{3}{2}\cos(2x)$
D) $\frac{5}{2}x\sin(2x) - \frac{1}{4}\cos(2x)$
E) $\frac{5}{4}\sin(2x) - \frac{5}{2}x\cos(2x) - \frac{3}{2}\cos(2x)$

(4) Mennyi $\int \frac{1}{x^3} + \frac{1}{4x^4} + \sqrt[2]{(2x)^5}\,dx$?

A) $\frac{8}{7}\sqrt{2}x^{7/2} - \frac{1}{12x^3} - \frac{1}{2x^2}$, B) $\frac{16}{7}\sqrt{2}x^{7/2} - \frac{1}{768x^3} - \frac{1}{2x^2}$, C) $\frac{8}{7}\sqrt{2}x^{7/2} - \frac{1}{192x^3} - \frac{1}{2x^2}$, D) $\frac{8}{7}\sqrt{2}x^{7/2} - \frac{1}{768x^3} - \frac{1}{4x^2}$, E) $\frac{8}{7}\sqrt{2}x^{7/2} + \frac{1}{768x^3} + \frac{1}{2x^2}$

(5) Keresd meg az $f(x) = x^2 - 13x + 29$ es az $g(x) = 2x + 5$ fuggvenyek altal bezart teruletet!

A) $\frac{125}{6}$, B) $\frac{65}{6}$, C) $\frac{77}{6}$, D) $\frac{95}{6}$, E) $\frac{71}{6}$

(6) Mennyi $\int x^4 \sin(4x^5)\,dx$?

A) 13.2
B) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x)$
C) $-\frac{1}{5}\cos(x^5)$
D) $-\frac{1}{16}\cos(4x^4)$
E) $-\frac{1}{20}\cos(4x^5)$

(7) Mennyi $\int_{-3}^{0} f(x)\,dx$, ha $f(x) = \begin{cases} 2 & \text{if } x < 0 \\ 4 + 1x & \text{if } x > 0. \end{cases}$?

A) 4, B) 1, C) 5, D) 6, E) 3

(8) Mennyi $\int_{-2}^{-1} f(x)\,dx$, ha $f(x) = \begin{cases} 4 + 5x & \text{if } x < 0 \\ 3 & \text{if } x > 0. \end{cases}$?

A) -1, B) -2, C) 0, D) 3, E) 1

(9) $y' = 4x^2 + 3x + 1$, $y(3) = 2$. Mennyi $y(10)$?

A) $\frac{8603}{6}$, B) $\frac{8597}{6}$, C) $\frac{8657}{6}$, D) $\frac{8609}{6}$, E) $\frac{8621}{6}$

(10) Mennyi $\int \frac{2}{4^2 + 3^2 x} + \sin(4x) + e^{-3x}\,dx$?

A) $-\frac{e^{-3x}}{3} - \frac{1}{4}\cos(4x) + \frac{1}{6}\tan^{-1}\left(\frac{3x}{4}\right)$
B) $-\frac{e^{-3x}}{3} - \frac{1}{4}\sin(4x) + \frac{1}{2}\tan^{-1}\left(\frac{3x}{4}\right)$
C) $-\frac{e^{-3x}}{3} - \frac{1}{4}\cos(4x) + \frac{2}{9}\tan^{-1}\left(\frac{3x}{4}\right)$
D) $-\frac{e^{-3x}}{3} + \frac{1}{4}\cos(4x) + \frac{1}{6}\tan^{-1}\left(\frac{3x}{4}\right)$
E) $-e^{-3x} - \frac{1}{4}\cos(4x) + \frac{1}{6}\tan^{-1}\left(\frac{3x}{4}\right)$

(11) Mennyi $\int \frac{4x+3}{1+1x^2}\,dx$?

A) $-\frac{7}{2}\log(3(x-1)) - \frac{1}{2}\log(-3(x+1))$
B) $2\log(x^2+1) - 3\tan^{-1}(x)$
C) $2\log(x^2+1) + 3\tan^{-1}(x)$
D) 17.3
E) 13.2

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.60. **No.60.**

(1) Keresd meg az $f(x) = x^2 - 10x + 8$ es az $g(x) = 4x + 3$ fuggvenyek altal bezart teruletet!

   A) $\frac{2}{3}$, B) $\frac{32}{3}$, C) $\frac{11}{3}$, D) $\frac{17}{3}$, E) $\frac{5}{3}$

(2) Mennyi $\int \frac{3x+2}{1+1x^2}\, dx$?

   A) $-\frac{5}{2}\log(2(x-1)) - \frac{1}{2}\log(-2(x+1))$
   B) $\frac{3}{2}\log\left(x^2+1\right) + 2\tan^{-1}(x)$
   C) $\frac{3}{2}\log\left(x^2+1\right) - 2\tan^{-1}(x)$
   D) 13.2
   E) 17.3

(3) Mennyi $\int \frac{1}{x^5} + \frac{1}{2x^3} + \sqrt[4]{(4x)^5}\, dx$?

   A) $\frac{16}{9}\sqrt{2}x^{9/4} + \frac{1}{4x^4} + \frac{1}{16x^2}$, B) $\frac{64}{9}\sqrt{2}x^{9/4} - \frac{1}{4x^4} - \frac{1}{16x^2}$, C) $\frac{16}{9}\sqrt{2}x^{9/4} - \frac{1}{4x^4} - \frac{1}{16x^2}$, D) $\frac{16}{9}\sqrt{2}x^{9/4} - \frac{1}{6x^4} - \frac{1}{16x^2}$, E) $\frac{16}{9}\sqrt{2}x^{9/4} - \frac{1}{4x^4} - \frac{1}{8x^2}$

(4) Mennyi $\int x^5 \log(3x)\, dx$?

   A) $\frac{1}{7}x^7\log(3x) - \frac{x^7}{49}$, B) $\frac{1}{5}x^5\log(3x) - \frac{x^5}{25}$, C) $\frac{1}{6}x^6\log(3x) - \frac{x^6}{36}$, D) $\frac{1}{2}x^6\log(3x) - \frac{x^6}{12}$, E) $\frac{1}{6}x^6\log(x) - \frac{x^6}{36}$

(5) $y' = 5x^2 + 5x + 2$, $y(1) = 1$. Mennyi $y(10)$?

   A) $\frac{3863}{2}$, B) $\frac{3847}{2}$, C) $\frac{3843}{2}$, D) $\frac{3845}{2}$, E) $\frac{3853}{2}$

(6) Mennyi $\int x^3 \sin(4x^4)\, dx$?

   A) $-\frac{1}{12}\cos\left(4x^3\right)$
   B) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x)$
   C) 13.2
   D) $-\frac{1}{16}\cos\left(4x^4\right)$
   E) $-\frac{1}{4}\cos\left(x^4\right)$

(7) Mennyi $\int_{-2}^{-1} f(x)\, dx$, ha $f(x) = \begin{cases} 3+1x & \text{if } x < 0 \\ 5 & \text{if } x > 0. \end{cases}$?

   A) 2, B) 5, C) 1, D) 3, E) 0

(8) Mennyi $\int (4+3x)\sin(5x)\, dx$?

   A) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \frac{4}{5}\cos(5x)$
   B) $\frac{3}{25}\sin(5x) - \frac{3}{5}x\cos(5x) - \frac{4}{5}\cos(5x)$
   C) $\frac{3}{125}\sin(5x) - \frac{3}{25}x\cos(5x) - \frac{4}{25}\cos(5x)$
   D) $\frac{3}{5}x\sin(5x) - \frac{17}{25}\cos(5x)$
   E) $-\frac{3}{25}\sin(5x) + \frac{3}{5}x\cos(5x) - \frac{4}{5}\cos(5x)$

(9) Mennyi $\int \frac{3}{5^2+2^2x} + \sin(3x) + e^{-5x}\, dx$?

   A) $-\frac{e^{-5x}}{5} - \frac{1}{3}\cos(3x) + \frac{3}{10}\tan^{-1}\left(\frac{2x}{5}\right)$
   B) $-\frac{e^{-5x}}{5} - \frac{1}{3}\cos(3x) + \frac{3}{4}\tan^{-1}\left(\frac{2x}{5}\right)$
   C) $-e^{-5x} - \frac{1}{3}\cos(3x) + \frac{3}{10}\tan^{-1}\left(\frac{2x}{5}\right)$
   D) $-\frac{e^{-5x}}{5} + \frac{1}{3}\cos(3x) + \frac{3}{10}\tan^{-1}\left(\frac{2x}{5}\right)$
   E) $-\frac{e^{-5x}}{5} - \frac{1}{3}\sin(3x) + \frac{3}{5}\tan^{-1}\left(\frac{2x}{5}\right)$

(10) Mennyi $\int_{-4}^{-2} f(x)\, dx$, ha $f(x) = \begin{cases} 2 & \text{if } x < 0 \\ 3+5x & \text{if } x > 0. \end{cases}$?

   A) 2, B) 4, C) 1, D) 0, E) -1

(11) Mennyi $\int x^3 \cos(5x^4)\, dx$?

   A) $\frac{1}{20}\sin\left(5x^4\right)$, B) $\frac{1}{15}x\sin(5x) + \frac{1}{75}\cos(5x)$, C) $\frac{1}{15}\sin\left(5x^3\right)$, D) $\frac{3\sin\left(x^4\right)}{4}$, E) $\frac{1}{5}x\sin(5x) + \frac{1}{25}\cos(5x)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.61. **No.61.**

(1) Mennyi $\int \frac{4}{3^2+5^2x} + \sin(3x) + e^{-2x} \, dx$?

   A) $-\frac{e^{-2x}}{2} - \frac{1}{3}\sin(3x) + \frac{4}{3}\tan^{-1}\left(\frac{5x}{3}\right)$
   B) $-\frac{e^{-2x}}{2} + \frac{1}{3}\cos(3x) + \frac{4}{15}\tan^{-1}\left(\frac{5x}{3}\right)$
   C) $-\frac{e^{-2x}}{2} - \frac{1}{3}\cos(3x) + \frac{4}{15}\tan^{-1}\left(\frac{5x}{3}\right)$
   D) $-\frac{e^{-2x}}{2} - \frac{1}{3}\cos(3x) + \frac{4}{25}\tan^{-1}\left(\frac{5x}{3}\right)$
   E) $-e^{-2x} - \frac{1}{3}\cos(3x) + \frac{4}{15}\tan^{-1}\left(\frac{5x}{3}\right)$

(2) Mennyi $\int x^5 \cos(2x^6) \, dx$?

   A) $\frac{1}{10}\sin\left(2x^5\right)$, B) $\frac{1}{12}\sin\left(2x^6\right)$, C) $\frac{5\sin\left(x^6\right)}{6}$, D) $\frac{1}{10}x\sin(2x) + \frac{1}{20}\cos(2x)$, E) $\frac{1}{2}x\sin(2x) + \frac{1}{4}\cos(2x)$

(3) Mennyi $\int (2 + 2x)\sin(2x) \, dx$?

   A) $\frac{1}{2}\sin(2x) - x\cos(2x) - \cos(2x)$
   B) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x) - \cos(2x)$
   C) $x\sin(2x) - \frac{1}{2}\cos(2x)$
   D) $-\frac{1}{2}\sin(2x) + x\cos(2x) - \cos(2x)$
   E) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x) - \frac{1}{2}\cos(2x)$

(4) $y' = 4x^2 + 4x + 5$, $y(5) = 2$. Mennyi $y(10)$?
   A) $\frac{4016}{3}$, B) $\frac{4013}{3}$, C) $\frac{4007}{3}$, D) $\frac{4031}{3}$, E) $\frac{4004}{3}$

(5) Mennyi $\int x^5 \sin(3x^6) \, dx$?
   A) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x)$
   B) 13.2
   C) $-\frac{1}{18}\cos\left(3x^6\right)$
   D) $-\frac{1}{15}\cos\left(3x^5\right)$
   E) $-\frac{1}{6}\cos\left(x^6\right)$

(6) Mennyi $\int x^3 \log(3x) \, dx$?
   A) $\frac{1}{3}x^3\log(3x) - \frac{x^3}{9}$, B) $\frac{3}{4}x^4\log(3x) - \frac{3x^4}{16}$, C) $\frac{1}{4}x^4\log(x) - \frac{x^4}{16}$, D) $\frac{1}{4}x^4\log(3x) - \frac{x^4}{16}$, E) $\frac{1}{5}x^5\log(3x) - \frac{x^5}{25}$

(7) Mennyi $\int_{-3}^{-1} f(x)\,dx$, ha $f(x) = \begin{cases} 3 & \text{if } x < 0 \\ 2 + 2x & \text{if } x > 0. \end{cases}$?

   A) 4, B) 3, C) 2, D) 6, E) 1

(8) Mennyi $\int \frac{3x+3}{1+9x^2} \, dx$?
   A) $\frac{1}{6}\log\left(9x^2 + 1\right) - \tan^{-1}(3x)$
   B) $3\log(3x+1) - 6\log(1 - 3x)$
   C) $\frac{1}{3}\log(-3(3x+1)) - \frac{2}{3}\log(3(3x-1))$
   D) $\frac{1}{6}\log\left(9x^2 + 1\right) + \tan^{-1}(3x)$
   E) $\frac{3}{2}\log\left(9x^2 + 1\right) + 9\tan^{-1}(3x)$

(9) Keresd meg az $f(x) = x^2 - 11x + 23$ es az $g(x) = 2x + 5$ fuggvenyek altal bezart teruletet!
   A) $\frac{11}{2}$, B) $\frac{7}{2}$, C) $\frac{5}{2}$, D) $\frac{1}{2}$, E) $\frac{9}{2}$

(10) Mennyi $\int \frac{1}{x^3} + \frac{1}{5x^5} + \sqrt[3]{(5x)^2} \, dx$?
   A) $\frac{3x^{5/3}}{\sqrt[3]{5}} - \frac{1}{12500x^4} - \frac{1}{4x^2}$, B) $35^{2/3}x^{5/3} - \frac{1}{12500x^4} - \frac{1}{2x^2}$, C) $\frac{3x^{5/3}}{\sqrt[3]{5}} - \frac{1}{20x^4} - \frac{1}{2x^2}$, D) $\frac{3x^{5/3}}{\sqrt[3]{5}} + \frac{1}{12500x^4} + \frac{1}{2x^2}$, E) $\frac{3x^{5/3}}{\sqrt[3]{5}} - \frac{1}{2500x^4} - \frac{1}{2x^2}$

(11) Mennyi $\int_{-2}^{0} f(x)\,dx$, ha $f(x) = \begin{cases} 1 + 4x & \text{if } x < 0 \\ 5 & \text{if } x > 0. \end{cases}$?

   A) 9, B) 6, C) 8, D) 10, E) 7

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.62. No.62.

(1) Mennyi $\int_{-2}^{-1} f(x)\,dx$, ha $f(x) = \begin{cases} 2 & \text{if } x < 0 \\ 3 + 5x & \text{if } x > 0. \end{cases}$?

     A) -3, B) 0, C) -2, D) -1, E) 2

(2) Mennyi $\int \frac{1}{x^2} + \frac{1}{4x^2} + \sqrt[4]{(2x)^5}\,dx$?

     A) $\frac{16}{9}\sqrt[4]{2}x^{9/4} - \frac{17}{16x}$, B) $\frac{8}{9}\sqrt[4]{2}x^{9/4} + \frac{17}{16x}$, C) $\frac{8}{9}\sqrt[4]{2}x^{9/4} - \frac{19}{48x}$, D) 13.2, E) $\frac{8}{9}\sqrt[4]{2}x^{9/4} - \frac{5}{4x}$

(3) $y' = 1x^2 + 1x + 5$, $y(1) = 5$. Mennyi $y(10)$?

     A) $\frac{855}{2}$, B) $\frac{853}{2}$, C) $\frac{851}{2}$, D) $\frac{865}{2}$, E) $\frac{845}{2}$

(4) Mennyi $\int x^4 \cos(4x^5)\,dx$?

     A) $\frac{4\sin(x^5)}{5}$, B) $\frac{1}{16}\sin(4x^4)$, C) $\frac{1}{16}x\sin(4x) + \frac{1}{64}\cos(4x)$, D) $\frac{1}{4}x\sin(4x) + \frac{1}{16}\cos(4x)$, E) $\frac{1}{20}\sin(4x^5)$

(5) Mennyi $\int \frac{5x+5}{1+9x^2}\,dx$?

     A) $5\log(3x+1) - 10\log(1-3x)$
     B) $\frac{5}{9}\log(-5(3x+1)) - \frac{10}{9}\log(5(3x-1))$
     C) $\frac{5}{18}\log(9x^2+1) + \frac{5}{3}\tan^{-1}(3x)$
     D) $\frac{5}{2}\log(9x^2+1) + 15\tan^{-1}(3x)$
     E) $\frac{5}{18}\log(9x^2+1) - \frac{5}{3}\tan^{-1}(3x)$

(6) Mennyi $\int x^5 \sin(2x^6)\,dx$?

     A) $-\frac{1}{12}\cos(2x^6)$
     B) 13.2
     C) $-\frac{1}{6}\cos(x^6)$
     D) $-\frac{1}{10}\cos(2x^5)$
     E) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x)$

(7) Mennyi $\int (5 + 5x)\sin(2x)\,dx$?

     A) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x) - \frac{5}{2}\cos(2x)$
     B) $\frac{5}{2}x\sin(2x) - \frac{5}{4}\cos(2x)$
     C) $\frac{5}{4}\sin(2x) - \frac{5}{2}x\cos(2x) - \frac{5}{2}\cos(2x)$
     D) $\frac{5}{8}\sin(2x) - \frac{5}{2}\cos^2(x) - \frac{5}{4}x\cos(2x)$
     E) $-\frac{5}{4}\sin(2x) + \frac{5}{2}x\cos(2x) - \frac{5}{2}\cos(2x)$

(8) Keresd meg az $f(x) = x^2 - 10x + 15$ es az $g(x) = 2x + 3$ fuggvenyek altal bezart teruletet!

     A) $\frac{32}{3}$, B) $\frac{26}{3}$, C) $\frac{2}{3}$, D) $\frac{17}{3}$, E) $\frac{11}{3}$

(9) Mennyi $\int x^3 \log(3x)\,dx$?

     A) $\frac{3}{4}x^4\log(3x) - \frac{3x^4}{16}$, B) $\frac{1}{5}x^5\log(3x) - \frac{x^5}{25}$, C) $\frac{1}{3}x^3\log(3x) - \frac{x^3}{9}$, D) $\frac{1}{4}x^4\log(x) - \frac{x^4}{16}$, E) $\frac{1}{4}x^4\log(3x) - \frac{x^4}{16}$

(10) Mennyi $\int \frac{5}{5^2 + 2^2 x} + \sin(5x) + e^{-4x}\,dx$?

     A) $-\frac{e^{-4x}}{4} - \frac{1}{5}\cos(5x) + \frac{1}{2}\tan^{-1}\left(\frac{2x}{5}\right)$
     B) $-\frac{e^{-4x}}{4} + \frac{1}{5}\cos(5x) + \frac{1}{2}\tan^{-1}\left(\frac{2x}{5}\right)$
     C) $-\frac{e^{-4x}}{4} - \frac{1}{5}\cos(5x) + \frac{5}{4}\tan^{-1}\left(\frac{2x}{5}\right)$
     D) $-e^{-4x} - \frac{1}{5}\cos(5x) + \frac{1}{2}\tan^{-1}\left(\frac{2x}{5}\right)$
     E) $-\frac{e^{-4x}}{4} - \frac{1}{5}\sin(5x) + \tan^{-1}\left(\frac{2x}{5}\right)$

(11) Mennyi $\int_{-2}^{2} f(x)\,dx$, ha $f(x) = \begin{cases} 2 + 4x & \text{if } x < 0 \\ 1 & \text{if } x > 0. \end{cases}$?

     A) 14, B) 9, C) 11, D) 12, E) 10

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.63. **No.63.**

(1) Mennyi $\int \frac{3}{4^2+4^2 x} + \sin(3x) + e^{-4x}\,dx$?

     A) $-\frac{e^{-4x}}{4} + \frac{1}{3}\cos(3x) + \frac{3}{16}\tan^{-1}(x)$

     B) $-\frac{e^{-4x}}{4} - \frac{1}{3}\cos(3x) + \frac{3}{16}\tan^{-1}(x)$

     C) 13.2

     D) $-\frac{e^{-4x}}{4} - \frac{1}{3}\sin(3x) + \frac{3}{4}\tan^{-1}(x)$

     E) $-e^{-4x} - \frac{1}{3}\cos(3x) + \frac{3}{16}\tan^{-1}(x)$

(2) Mennyi $\int_{-2}^{0} f(x)\,dx$, ha $f(x) = \begin{cases} 5 & \text{if } x < 0 \\ 3+1x & \text{if } x > 0. \end{cases}$?

     A) 5, B) 10, C) 7, D) 8, E) 6

(3) Mennyi $\int x^5 \sin(4x^6)\,dx$?

     A) $-\frac{1}{20}\cos\left(4x^5\right)$

     B) $-\frac{1}{24}\cos\left(4x^6\right)$

     C) 13.2

     D) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x)$

     E) $-\frac{1}{6}\cos\left(x^6\right)$

(4) Mennyi $\int x^2 \log(3x)\,dx$?

     A) $\frac{1}{3}x^3\log(x) - \frac{x^3}{9}$, B) $\frac{1}{2}x^2\log(3x) - \frac{x^2}{4}$, C) $x^3\log(3x) - \frac{x^3}{3}$, D) $\frac{1}{3}x^3\log(3x) - \frac{x^3}{9}$, E) $\frac{1}{4}x^4\log(3x) - \frac{x^4}{16}$

(5) Keresd meg az $f(x) = x^2 - 10x + 10$ es az $g(x) = 5x + 4$ fuggvenyek altal bezart teruletet!

     A) $\frac{13}{6}$, B) $\frac{1}{6}$, C) $\frac{7}{6}$, D) $\frac{23}{6}$, E) $\frac{25}{6}$

(6) Mennyi $\int (4+4x)\sin(3x)\,dx$?

     A) $\frac{4}{3}x\sin(3x) - \frac{8}{9}\cos(3x)$

     B) $\frac{4}{27}\sin(3x) - \frac{4}{9}x\cos(3x) - \frac{4}{9}\cos(3x)$

     C) $-\frac{4}{9}\sin(3x) + \frac{4}{3}x\cos(3x) - \frac{4}{3}\cos(3x)$

     D) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x) - \frac{4}{3}\cos(3x)$

     E) $\frac{4}{9}\sin(3x) - \frac{4}{3}x\cos(3x) - \frac{4}{3}\cos(3x)$

(7) $y' = 5x^2 + 2x + 2$, $y(3) = 5$. Mennyi $y(10)$?

     A) $\frac{5180}{3}$, B) $\frac{5189}{3}$, C) $\frac{5174}{3}$, D) $\frac{5195}{3}$, E) $\frac{5171}{3}$

(8) Mennyi $\int \frac{1}{x^4} + \frac{1}{2x^5} + \sqrt[4]{(2x)^2}\,dx$?

     A) $\frac{2}{3}\sqrt{2}x^{3/2} - \frac{1}{128x^4} - \frac{1}{5x^3}$, B) $\frac{2}{3}\sqrt{2}x^{3/2} - \frac{1}{8x^4} - \frac{1}{3x^3}$, C) $\frac{2}{3}\sqrt{2}x^{3/2} - \frac{1}{64x^4} - \frac{1}{3x^3}$, D) $\frac{2}{3}\sqrt{2}x^{3/2} + \frac{1}{128x^4} + \frac{1}{3x^3}$, E) $\frac{4}{3}\sqrt{2}x^{3/2} - \frac{1}{128x^4} - \frac{1}{3x^3}$

(9) Mennyi $\int_{-3}^{3} f(x)\,dx$, ha $f(x) = \begin{cases} 5+1x & \text{if } x < 0 \\ 4 & \text{if } x > 0. \end{cases}$?

     A) $\frac{55}{2}$, B) $\frac{57}{2}$, C) $\frac{59}{2}$, D) $\frac{63}{2}$, E) $\frac{61}{2}$

(10) Mennyi $\int \frac{2x+2}{1+9x^2}\,dx$?

     A) $\frac{2}{9}\log(-2(3x+1)) - \frac{4}{9}\log(2(3x-1))$

     B) $\frac{1}{9}\log\left(9x^2+1\right) - \frac{2}{3}\tan^{-1}(3x)$

     C) $2\log(3x+1) - 4\log(1-3x)$

     D) $\frac{1}{9}\log\left(9x^2+1\right) + \frac{2}{3}\tan^{-1}(3x)$

     E) $\log\left(9x^2+1\right) + 6\tan^{-1}(3x)$

(11) Mennyi $\int x^3 \cos(5x^4)\,dx$?

     A) $\frac{1}{15}\sin\left(5x^3\right)$, B) $\frac{3\sin\left(x^4\right)}{4}$, C) $\frac{1}{5}x\sin(5x) + \frac{1}{25}\cos(5x)$, D) $\frac{1}{15}x\sin(5x) + \frac{1}{75}\cos(5x)$, E) $\frac{1}{20}\sin\left(5x^4\right)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.64. **No.64.**

(1) Mennyi $\int x^3 \log(3x)\, dx$?

A) $\frac{1}{3}x^3 \log(3x) - \frac{x^3}{9}$, B) $\frac{1}{4}x^4 \log(x) - \frac{x^4}{16}$, C) $\frac{1}{5}x^5 \log(3x) - \frac{x^5}{25}$, D) $\frac{1}{4}x^4 \log(3x) - \frac{x^4}{16}$, E) $\frac{3}{4}x^4 \log(3x) - \frac{3x^4}{16}$

(2) Mennyi $\int \frac{1}{x^4} + \frac{1}{2x^2} + \sqrt[3]{(5x)^5}\, dx$?

A) $\frac{75}{8}5^{2/3}x^{8/3} - \frac{1}{3x^3} - \frac{1}{4x}$, B) 13.2, C) $\frac{15}{8}5^{2/3}x^{8/3} - \frac{1}{5x^3} - \frac{1}{4x}$, D) $\frac{15}{8}5^{2/3}x^{8/3} + \frac{1}{3x^3} + \frac{1}{4x}$, E) $\frac{15}{8}5^{2/3}x^{8/3} - \frac{1}{3x^3} - \frac{1}{2x}$

(3) Mennyi $\int_{-2}^{3} f(x)\, dx$, ha $f(x) = \begin{cases} 2 + 1x & \text{if } x < 0 \\ 1 & \text{if } x > 0. \end{cases}$?

A) $\frac{21}{2}$, B) $\frac{27}{2}$, C) $\frac{25}{2}$, D) $\frac{23}{2}$, E) $\frac{17}{2}$

(4) $y' = 4x^2 + 5x + 5$, $y(3) = 5$. Mennyi $y(10)$?

A) $\frac{9365}{6}$, B) $\frac{9359}{6}$, C) $\frac{9335}{6}$, D) $\frac{9389}{6}$, E) $\frac{9347}{6}$

(5) Mennyi $\int (2 + 4x)\sin(3x)\, dx$?

A) $\frac{4}{3}x\sin(3x) - \frac{2}{9}\cos(3x)$
B) $-\frac{4}{9}\sin(3x) + \frac{4}{3}x\cos(3x) - \frac{2}{3}\cos(3x)$
C) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x) - \frac{2}{3}\cos(3x)$
D) $\frac{4}{27}\sin(3x) - \frac{4}{9}x\cos(3x) - \frac{2}{9}\cos(3x)$
E) $\frac{4}{9}\sin(3x) - \frac{4}{3}x\cos(3x) - \frac{2}{3}\cos(3x)$

(6) Mennyi $\int \frac{3}{2^2 + 5^2 x} + \sin(4x) + e^{-5x}\, dx$?

A) $-\frac{e^{-5x}}{5} - \frac{1}{4}\sin(4x) + \frac{3}{2}\tan^{-1}\left(\frac{5x}{2}\right)$
B) $-\frac{e^{-5x}}{5} - \frac{1}{4}\cos(4x) + \frac{3}{10}\tan^{-1}\left(\frac{5x}{2}\right)$
C) $-\frac{e^{-5x}}{5} - \frac{1}{4}\cos(4x) + \frac{3}{25}\tan^{-1}\left(\frac{5x}{2}\right)$
D) $-\frac{e^{-5x}}{5} + \frac{1}{4}\cos(4x) + \frac{3}{10}\tan^{-1}\left(\frac{5x}{2}\right)$
E) $-e^{-5x} - \frac{1}{4}\cos(4x) + \frac{3}{10}\tan^{-1}\left(\frac{5x}{2}\right)$

(7) Mennyi $\int \frac{4x+3}{1+9x^2}\, dx$?

A) $\frac{5}{18}\log(-3(3x+1)) - \frac{13}{18}\log(3(3x-1))$
B) $\frac{2}{9}\log\left(9x^2 + 1\right) - \tan^{-1}(3x)$
C) $2\log\left(9x^2 + 1\right) + 9\tan^{-1}(3x)$
D) $\frac{2}{9}\log\left(9x^2 + 1\right) + \tan^{-1}(3x)$
E) $\frac{5}{2}\log(-3(3x+1)) - \frac{13}{2}\log(3(3x-1))$

(8) Mennyi $\int x^3 \cos(2x^4)\, dx$?

A) $\frac{1}{2}x\sin(2x) + \frac{1}{4}\cos(2x)$, B) $\frac{3\sin\left(x^4\right)}{4}$, C) $\frac{1}{8}\sin\left(2x^4\right)$, D) $\frac{1}{6}\sin\left(2x^3\right)$, E) $\frac{1}{6}x\sin(2x) + \frac{1}{12}\cos(2x)$

(9) Mennyi $\int_{-1}^{4} f(x)\, dx$, ha $f(x) = \begin{cases} 3 & \text{if } x < 0 \\ 4 + 3x & \text{if } x > 0. \end{cases}$?

A) 38, B) 39, C) 41, D) 40, E) 43

(10) Keresd meg az $f(x) = x^2 - 10x + 15$ es az $g(x) = 3x + 3$ fuggvenyek altal bezart teruletet!

A) $\frac{5}{6}$, B) $\frac{7}{6}$, C) $\frac{23}{6}$, D) $\frac{17}{6}$, E) $\frac{1}{6}$

(11) Mennyi $\int x^4 \sin(4x^5)\, dx$?

A) $-\frac{1}{16}\cos\left(4x^4\right)$
B) 13.2
C) $-\frac{1}{20}\cos\left(4x^5\right)$
D) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x)$
E) $-\frac{1}{5}\cos\left(x^5\right)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.65. No.65.

(1) $y' = 5x^2 + 4x + 3$, $y(5) = 3$. Mennyi $y(10)$?

   A) $\frac{4867}{3}$, B) $\frac{4858}{3}$, C) $\frac{4861}{3}$, D) $\frac{4879}{3}$, E) $\frac{4876}{3}$

(2) Mennyi $\int x^2 \sin(4x^3)\, dx$?

   A) $-\frac{1}{12}\cos\left(4x^3\right)$
   B) $-\frac{1}{8}\cos\left(4x^2\right)$
   C) $-\frac{1}{3}\cos\left(x^3\right)$
   D) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x)$
   E) 13.2

(3) Keresd meg az $f(x) = x^2 - 11x + 16$ es az $g(x) = 3x + 4$ fuggvenyek altal bezart teruletet!

   A) $\frac{20}{3}$, B) $\frac{8}{3}$, C) $\frac{5}{3}$, D) $\frac{32}{3}$, E) $\frac{23}{3}$

(4) Mennyi $\int \frac{1}{x^5} + \frac{1}{3x^4} + \sqrt[4]{(3x)^2}\, dx$?

   A) $\frac{2x^{3/2}}{\sqrt{3}} + \frac{1}{4x^4} + \frac{1}{243x^3}$, B) $\frac{2x^{3/2}}{\sqrt{3}} - \frac{1}{6x^4} - \frac{1}{243x^3}$, C) $2\sqrt{3}x^{3/2} - \frac{1}{4x^4} - \frac{1}{243x^3}$, D) $\frac{2x^{3/2}}{\sqrt{3}} - \frac{1}{4x^4} - \frac{1}{9x^3}$, E) $\frac{2x^{3/2}}{\sqrt{3}} - \frac{1}{4x^4} - \frac{1}{81x^3}$

(5) Mennyi $\int \frac{5}{2^2 + 2^2 x} + \sin(2x) + e^{-4x}\, dx$?

   A) $-\frac{e^{-4x}}{4} - \frac{1}{2}\sin(2x) + \frac{5}{2}\tan^{-1}(x)$
   B) $-\frac{e^{-4x}}{4} - \frac{1}{2}\cos(2x) + \frac{5}{4}\tan^{-1}(x)$
   C) $-\frac{e^{-4x}}{4} + \frac{1}{2}\cos(2x) + \frac{5}{4}\tan^{-1}(x)$
   D) 13.2
   E) $-e^{-4x} - \frac{1}{2}\cos(2x) + \frac{5}{4}\tan^{-1}(x)$

(6) Mennyi $\int_{-3}^{-1} f(x)\, dx$, ha $f(x) = \begin{cases} 4 & \text{if } x < 0 \\ 3 + 1x & \text{if } x > 0. \end{cases}$?

   A) 5, B) 8, C) 4, D) 6, E) 3

(7) Mennyi $\int x^2 \log(2x)\, dx$?

   A) $\frac{1}{3}x^3\log(x) - \frac{x^3}{9}$, B) $\frac{1}{4}x^4\log(2x) - \frac{x^4}{16}$, C) $\frac{2}{3}x^3\log(2x) - \frac{2x^3}{9}$, D) $\frac{1}{2}x^2\log(2x) - \frac{x^2}{4}$, E) $\frac{1}{3}x^3\log(2x) - \frac{x^3}{9}$

(8) Mennyi $\int x^2 \cos(5x^3)\, dx$?

   A) $\frac{2\sin\left(x^3\right)}{3}$, B) $\frac{1}{5}x\sin(5x) + \frac{1}{25}\cos(5x)$, C) $\frac{1}{15}\sin\left(5x^3\right)$, D) $\frac{1}{10}x\sin(5x) + \frac{1}{50}\cos(5x)$, E) $\frac{1}{10}\sin\left(5x^2\right)$

(9) Mennyi $\int_{-1}^{5} f(x)\, dx$, ha $f(x) = \begin{cases} 5 + 5x & \text{if } x < 0 \\ 4 & \text{if } x > 0. \end{cases}$?

   A) $\frac{177}{2}$, B) $\frac{173}{2}$, C) $\frac{175}{2}$, D) $\frac{183}{2}$, E) $\frac{179}{2}$

(10) Mennyi $\int (4 + 4x)\sin(3x)\, dx$?

   A) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x) - \frac{4}{3}\cos(3x)$
   B) $\frac{4}{27}\sin(3x) - \frac{4}{9}x\cos(3x) - \frac{4}{9}\cos(3x)$
   C) $\frac{4}{3}x\sin(3x) - \frac{8}{9}\cos(3x)$
   D) $\frac{4}{9}\sin(3x) - \frac{4}{3}x\cos(3x) - \frac{4}{3}\cos(3x)$
   E) $-\frac{4}{9}\sin(3x) + \frac{4}{3}x\cos(3x) - \frac{4}{3}\cos(3x)$

(11) Mennyi $\int \frac{5x+2}{1+1x^2}\, dx$?

   A) 13.2
   B) $\frac{5}{2}\log\left(x^2 + 1\right) - 2\tan^{-1}(x)$
   C) 17.3
   D) $-\frac{7}{2}\log(2(x - 1)) - \frac{3}{2}\log(-2(x + 1))$
   E) $\frac{5}{2}\log\left(x^2 + 1\right) + 2\tan^{-1}(x)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.66. **No.66.**

(1) Mennyi $\int x^5 \cos(3x^6)\,dx$?

   A) $\frac{1}{15}\sin\left(3x^5\right)$, B) $\frac{5\sin\left(x^6\right)}{6}$, C) $\frac{1}{3}x\sin(3x) + \frac{1}{9}\cos(3x)$, D) $\frac{1}{18}\sin\left(3x^6\right)$, E) $\frac{1}{15}x\sin(3x) + \frac{1}{45}\cos(3x)$

(2) Mennyi $\int \frac{5}{4^2+4^2x} + \sin(5x) + e^{-5x}\,dx$?

   A) $-e^{-5x} - \frac{1}{5}\cos(5x) + \frac{5}{16}\tan^{-1}(x)$
   B) 13.2
   C) $-\frac{e^{-5x}}{5} - \frac{1}{5}\cos(5x) + \frac{5}{16}\tan^{-1}(x)$
   D) $-\frac{e^{-5x}}{5} + \frac{1}{5}\cos(5x) + \frac{5}{16}\tan^{-1}(x)$
   E) $-\frac{e^{-5x}}{5} - \frac{1}{5}\sin(5x) + \frac{5}{4}\tan^{-1}(x)$

(3) Mennyi $\int_{-2}^{1} f(x)\,dx$, ha $f(x) = \begin{cases} 3 & \text{if } x < 0 \\ 4+5x & \text{if } x > 0. \end{cases}$?

   A) $\frac{27}{2}$, B) $\frac{15}{2}$, C) $\frac{21}{2}$, D) $\frac{19}{2}$, E) $\frac{25}{2}$

(4) Mennyi $\int x^3 \log(3x)\,dx$?

   A) $\frac{3}{4}x^4\log(3x) - \frac{3x^4}{16}$, B) $\frac{1}{4}x^4\log(x) - \frac{x^4}{16}$, C) $\frac{1}{4}x^4\log(3x) - \frac{x^4}{16}$, D) $\frac{1}{3}x^3\log(3x) - \frac{x^3}{9}$, E) $\frac{1}{5}x^5\log(3x) - \frac{x^5}{25}$

(5) $y' = 1x^2 + 3x + 5$, $y(5) = 1$. Mennyi $y(10)$?

   A) $\frac{2521}{6}$, B) $\frac{2539}{6}$, C) $\frac{2551}{6}$, D) $\frac{2557}{6}$, E) $\frac{2581}{6}$

(6) Mennyi $\int x^4 \sin(3x^5)\,dx$?

   A) $-\frac{1}{12}\cos\left(3x^4\right)$
   B) $-\frac{1}{5}\cos\left(x^5\right)$
   C) 13.2
   D) $-\frac{1}{15}\cos\left(3x^5\right)$
   E) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x)$

(7) Keresd meg az $f(x) = x^2 - 17x + 38$ es az $g(x) = 4x + 2$ fuggvenyek altal bezart teruletet!

   A) $\frac{89}{6}$, B) $\frac{125}{6}$, C) $\frac{65}{6}$, D) $\frac{71}{6}$, E) $\frac{77}{6}$

(8) Mennyi $\int \frac{1}{x^3} + \frac{1}{5x^2} + \sqrt[4]{(2x)^5}\,dx$?

   A) $\frac{8}{9}\sqrt[4]{2}x^{9/4} - \frac{1}{4x^2} - \frac{1}{25x}$, B) $\frac{16}{9}\sqrt[4]{2}x^{9/4} - \frac{1}{2x^2} - \frac{1}{25x}$, C) $\frac{8}{9}\sqrt[4]{2}x^{9/4} - \frac{1}{2x^2} - \frac{1}{5x}$, D) 13.2, E) $\frac{8}{9}\sqrt[4]{2}x^{9/4} + \frac{1}{2x^2} + \frac{1}{25x}$

(9) Mennyi $\int_{-1}^{3} f(x)\,dx$, ha $f(x) = \begin{cases} 1+1x & \text{if } x < 0 \\ 2 & \text{if } x > 0. \end{cases}$?

   A) $\frac{13}{2}$, B) $\frac{9}{2}$, C) $\frac{17}{2}$, D) $\frac{11}{2}$, E) $\frac{19}{2}$

(10) Mennyi $\int (2+3x)\sin(5x)\,dx$?

   A) $\frac{3}{5}x\sin(5x) - \frac{7}{25}\cos(5x)$
   B) $-\frac{3}{25}\sin(5x) + \frac{3}{5}x\cos(5x) - \frac{2}{5}\cos(5x)$
   C) $\frac{3}{25}\sin(5x) - \frac{3}{5}x\cos(5x) - \frac{2}{5}\cos(5x)$
   D) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \frac{2}{5}\cos(5x)$
   E) $\frac{3}{125}\sin(5x) - \frac{3}{25}x\cos(5x) - \frac{2}{25}\cos(5x)$

(11) Mennyi $\int \frac{4x+4}{1+1x^2}\,dx$?

   A) $2\log\left(x^2+1\right) - 4\tan^{-1}(x)$
   B) $2\log\left(x^2+1\right) + 4\tan^{-1}(x)$
   C) 17.3
   D) $-4\log(x-1)$
   E) 13.2

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.67. **No.67.**

(1) Mennyi $\int_{-4}^{-1} f(x)\,dx$, ha $f(x) = \begin{cases} 3+4x & \text{if } x < 0 \\ 4 & \text{if } x > 0. \end{cases}$?

   A) 8, B) 12, C) 7, D) 10, E) 9

(2) Mennyi $\int \frac{4x+3}{1+4x^2}\,dx$?

   A) $\log(-3(2x+1)) - 5\log(3(2x-1))$
   B) $2\log\left(4x^2+1\right) + 6\tan^{-1}(2x)$
   C) $\frac{1}{2}\log\left(4x^2+1\right) + \frac{3}{2}\tan^{-1}(2x)$
   D) $\frac{1}{2}\log\left(4x^2+1\right) - \frac{3}{2}\tan^{-1}(2x)$
   E) $\frac{1}{4}\log(-3(2x+1)) - \frac{5}{4}\log(3(2x-1))$

(3) Mennyi $\int \frac{5}{5^2+2^2x} + \sin(2x) + e^{-5x}\,dx$?

   A) $-\frac{e^{-5x}}{5} - \frac{1}{2}\cos(2x) + \frac{5}{4}\tan^{-1}\left(\frac{2x}{5}\right)$
   B) $-\frac{e^{-5x}}{5} - \frac{1}{2}\cos(2x) + \frac{1}{2}\tan^{-1}\left(\frac{2x}{5}\right)$
   C) $-\frac{e^{-5x}}{5} + \frac{1}{2}\cos(2x) + \frac{1}{2}\tan^{-1}\left(\frac{2x}{5}\right)$
   D) $-\frac{e^{-5x}}{5} - \frac{1}{2}\sin(2x) + \tan^{-1}\left(\frac{2x}{5}\right)$
   E) $-e^{-5x} - \frac{1}{2}\cos(2x) + \frac{1}{2}\tan^{-1}\left(\frac{2x}{5}\right)$

(4) Mennyi $\int x^4 \log(5x)\,dx$?

   A) $\frac{1}{5}x^5\log(x) - \frac{x^5}{25}$, B) $x^5\log(5x) - \frac{x^5}{5}$, C) $\frac{1}{4}x^4\log(5x) - \frac{x^4}{16}$, D) $\frac{1}{6}x^6\log(5x) - \frac{x^6}{36}$, E) $\frac{1}{5}x^5\log(5x) - \frac{x^5}{25}$

(5) Mennyi $\int(4+3x)\sin(3x)\,dx$?

   A) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x) - \frac{4}{3}\cos(3x)$
   B) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x) - \frac{4}{9}\cos(3x)$
   C) $x\sin(3x) - \cos(3x)$
   D) $-\frac{1}{3}\sin(3x) + x\cos(3x) - \frac{4}{3}\cos(3x)$
   E) $\frac{1}{3}\sin(3x) - x\cos(3x) - \frac{4}{3}\cos(3x)$

(6) Keresd meg az $f(x) = x^2 - 13x + 30$ es az $g(x) = 2x + 2$ fuggvenyek altal bezart teruletet!

   A) $\frac{3}{2}$, B) $\frac{1}{2}$, C) $\frac{5}{2}$, D) $\frac{9}{2}$, E) $\frac{7}{2}$

(7) $y' = 4x^2 + 5x + 2$, $y(3) = 5$. Mennyi $y(10)$?

   A) $\frac{9221}{6}$, B) $\frac{9215}{6}$, C) $\frac{9251}{6}$, D) $\frac{9209}{6}$, E) $\frac{9263}{6}$

(8) Mennyi $\int x^5 \sin(2x^6)\,dx$?

   A) $-\frac{1}{10}\cos\left(2x^5\right)$
   B) 13.2
   C) $-\frac{1}{6}\cos\left(x^6\right)$
   D) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x)$
   E) $-\frac{1}{12}\cos\left(2x^6\right)$

(9) Mennyi $\int_{-2}^{0} f(x)\,dx$, ha $f(x) = \begin{cases} 5 & \text{if } x < 0 \\ 3+3x & \text{if } x > 0. \end{cases}$?

   A) 8, B) 10, C) 6, D) 9, E) 7

(10) Mennyi $\int x^4 \cos(3x^5)\,dx$?

   A) $\frac{4\sin\left(x^5\right)}{5}$, B) $\frac{1}{15}\sin\left(3x^5\right)$, C) $\frac{1}{12}x\sin(3x) + \frac{1}{36}\cos(3x)$, D) $\frac{1}{3}x\sin(3x) + \frac{1}{9}\cos(3x)$, E) $\frac{1}{12}\sin\left(3x^4\right)$

(11) Mennyi $\int \frac{1}{x^5} + \frac{1}{5x^4} + \sqrt[5]{(5x)^5}\,dx$?

   A) $\frac{1}{4x^4} + \frac{1}{1875x^3} + \frac{5x^2}{2}$, B) $-\frac{1}{6x^4} - \frac{1}{1875x^3} + \frac{5x^2}{2}$, C) $-\frac{1}{4x^4} - \frac{1}{375x^3} + \frac{5x^2}{2}$, D) $-\frac{1}{4x^4} - \frac{1}{1875x^3} + \frac{25x^2}{2}$, E) $-\frac{1}{4x^4} - \frac{1}{15x^3} + \frac{5x^2}{2}$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.68. **No.68.**

(1) $y' = 3x^2 + 1x + 2$, $y(1) = 3$. Mennyi $y(10)$?

   A) $\frac{2127}{2}$, B) $\frac{2131}{2}$, C) $\frac{2121}{2}$, D) $\frac{2139}{2}$, E) $\frac{2125}{2}$

(2) Mennyi $\int x^5 \cos(3x^6)\,dx$?

   A) $\frac{5\sin(x^6)}{6}$, B) $\frac{1}{15}x\sin(3x) + \frac{1}{45}\cos(3x)$, C) $\frac{1}{15}\sin(3x^5)$, D) $\frac{1}{18}\sin(3x^6)$, E) $\frac{1}{3}x\sin(3x) + \frac{1}{9}\cos(3x)$

(3) Mennyi $\int x^4 \log(5x)\,dx$?

   A) $\frac{1}{4}x^4\log(5x) - \frac{x^4}{16}$, B) $\frac{1}{5}x^5\log(x) - \frac{x^5}{25}$, C) $\frac{1}{5}x^5\log(5x) - \frac{x^5}{25}$, D) $\frac{1}{6}x^6\log(5x) - \frac{x^6}{36}$, E) $x^5\log(5x) - \frac{x^5}{5}$

(4) Mennyi $\int (5 + 3x)\sin(4x)\,dx$?

   A) $-\frac{3}{16}\sin(4x) + \frac{3}{4}x\cos(4x) - \frac{5}{4}\cos(4x)$
   B) $\frac{3}{64}\sin(4x) - \frac{3}{16}x\cos(4x) - \frac{5}{16}\cos(4x)$
   C) $\frac{3}{16}\sin(4x) - \frac{3}{4}x\cos(4x) - \frac{5}{4}\cos(4x)$
   D) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x) - \frac{5}{4}\cos(4x)$
   E) $\frac{3}{4}x\sin(4x) - \frac{17}{16}\cos(4x)$

(5) Mennyi $\int_{-4}^{3} f(x)\,dx$, ha $f(x) = \begin{cases} 5 + 5x & \text{if } x < 0 \\ 2 & \text{if } x > 0. \end{cases}$?

   A) $\frac{83}{2}$, B) $\frac{89}{2}$, C) $\frac{91}{2}$, D) $\frac{81}{2}$, E) $\frac{85}{2}$

(6) Mennyi $\int \frac{5x+5}{1+1x^2}\,dx$?

   A) 13.2
   B) 17.3
   C) $-5\log(x-1)$
   D) $\frac{5}{2}\log(x^2+1) - 5\tan^{-1}(x)$
   E) $\frac{5}{2}\log(x^2+1) + 5\tan^{-1}(x)$

(7) Mennyi $\int x^3 \sin(4x^4)\,dx$?

   A) $-\frac{1}{4}\cos(x^4)$
   B) $-\frac{1}{16}\cos(4x^4)$
   C) 13.2
   D) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x)$
   E) $-\frac{1}{12}\cos(4x^3)$

(8) Keresd meg az $f(x) = x^2 - 14x + 25$ es az $g(x) = 4x + 4$ fuggvenyek altal bezart teruletet!

   A) $\frac{2}{3}$, B) $\frac{14}{3}$, C) $\frac{32}{3}$, D) $\frac{11}{3}$, E) $\frac{8}{3}$

(9) Mennyi $\int \frac{1}{x^2} + \frac{1}{3x^5} + \sqrt[5]{(5x)^5}\,dx$?

   A) $-\frac{1}{972x^4} + \frac{5x^2}{2} - \frac{1}{3x}$, B) $-\frac{1}{12x^4} + \frac{5x^2}{2} - \frac{1}{x}$, C) $-\frac{1}{324x^4} + \frac{5x^2}{2} - \frac{1}{x}$, D) $-\frac{1}{972x^4} + \frac{25x^2}{2} - \frac{1}{x}$, E) $\frac{1}{972x^4} + \frac{5x^2}{2} + \frac{1}{x}$

(10) Mennyi $\int_{-4}^{1} f(x)\,dx$, ha $f(x) = \begin{cases} 5 & \text{if } x < 0 \\ 4 + 5x & \text{if } x > 0. \end{cases}$?

   A) $\frac{53}{2}$, B) $\frac{47}{2}$, C) $\frac{43}{2}$, D) $\frac{49}{2}$, E) $\frac{45}{2}$

(11) Mennyi $\int \frac{5}{3^2+5^2x} + \sin(3x) + e^{-4x}\,dx$?

   A) $-\frac{e^{-4x}}{4} + \frac{1}{3}\cos(3x) + \frac{1}{3}\tan^{-1}\left(\frac{5x}{3}\right)$
   B) $-e^{-4x} - \frac{1}{3}\cos(3x) + \frac{1}{3}\tan^{-1}\left(\frac{5x}{3}\right)$
   C) $-\frac{e^{-4x}}{4} - \frac{1}{3}\sin(3x) + \frac{5}{3}\tan^{-1}\left(\frac{5x}{3}\right)$
   D) $-\frac{e^{-4x}}{4} - \frac{1}{3}\cos(3x) + \frac{1}{5}\tan^{-1}\left(\frac{5x}{3}\right)$
   E) $-\frac{e^{-4x}}{4} - \frac{1}{3}\cos(3x) + \frac{1}{3}\tan^{-1}\left(\frac{5x}{3}\right)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.69. **No.69.**

(1) Mennyi $\int_{-4}^{2} f(x)\,dx$, ha $f(x) = \begin{cases} 2+4x & \text{if } x < 0 \\ 5 & \text{if } x > 0. \end{cases}$?

    A) 27, B) 30, C) 32, D) 29, E) 28

(2) Mennyi $\int x^2 \sin(2x^3)\,dx$?

    A) 13.2
    B) $-\frac{1}{3}\cos\left(x^3\right)$
    C) $-\frac{1}{4}\cos\left(2x^2\right)$
    D) $-\frac{1}{6}\cos\left(2x^3\right)$
    E) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x)$

(3) Mennyi $\int \frac{1}{x^4} + \frac{1}{5x^5} + \sqrt[2]{(2x)^2}\,dx$?

    A) $-\frac{1}{2500x^4} - \frac{1}{3x^3} + x^2$, B) $-\frac{1}{12500x^4} - \frac{1}{5x^3} + x^2$, C) $-\frac{1}{20x^4} - \frac{1}{3x^3} + x^2$, D) $\frac{1}{12500x^4} + \frac{1}{3x^3} + x^2$, E) $-\frac{1}{12500x^4} - \frac{1}{3x^3} + 2x^2$

(4) Mennyi $\int \frac{5x+3}{1+4x^2}\,dx$?

    A) $\frac{5}{8}\log\left(4x^2+1\right) + \frac{3}{2}\tan^{-1}(2x)$
    B) $\frac{1}{2}\log(-3(2x+1)) - \frac{11}{2}\log(3(2x-1))$
    C) $\frac{5}{2}\log\left(4x^2+1\right) + 6\tan^{-1}(2x)$
    D) $\frac{5}{8}\log\left(4x^2+1\right) - \frac{3}{2}\tan^{-1}(2x)$
    E) $\frac{1}{8}\log(-3(2x+1)) - \frac{11}{8}\log(3(2x-1))$

(5) $y' = 1x^2 + 5x + 1$, $y(4) = 4$. Mennyi $y(10)$?

    A) 523, B) 522, C) 526, D) 525, E) 532

(6) Mennyi $\int x^5 \log(5x)\,dx$?

    A) $\frac{1}{6}x^6\log(x) - \frac{x^6}{36}$, B) $\frac{5}{6}x^6\log(5x) - \frac{5x^6}{36}$, C) $\frac{1}{6}x^6\log(5x) - \frac{x^6}{36}$, D) $\frac{1}{5}x^5\log(5x) - \frac{x^5}{25}$, E) $\frac{1}{7}x^7\log(5x) - \frac{x^7}{49}$

(7) Mennyi $\int_{-4}^{1} f(x)\,dx$, ha $f(x) = \begin{cases} 1 & \text{if } x < 0 \\ 2+1x & \text{if } x > 0. \end{cases}$?

    A) $\frac{3}{2}$, B) $\frac{11}{2}$, C) $\frac{7}{2}$, D) $\frac{9}{2}$, E) $\frac{13}{2}$

(8) Mennyi $\int (3+4x)\sin(4x)\,dx$?

    A) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x) - \frac{3}{4}\cos(4x)$
    B) $-\frac{1}{4}\sin(4x) + x\cos(4x) - \frac{3}{4}\cos(4x)$
    C) $x\sin(4x) - \frac{1}{2}\cos(4x)$
    D) $\frac{1}{4}\sin(4x) - x\cos(4x) - \frac{3}{4}\cos(4x)$
    E) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x) - \frac{3}{16}\cos(4x)$

(9) Keresd meg az $f(x) = x^2 - 14x + 37$ es az $g(x) = 1x + 1$ fuggvenyek altal bezart teruletet!

    A) $\frac{89}{6}$, B) $\frac{125}{6}$, C) $\frac{95}{6}$, D) $\frac{83}{6}$, E) $\frac{71}{6}$

(10) Mennyi $\int x^4 \cos(3x^5)\,dx$?

    A) $\frac{1}{15}\sin\left(3x^5\right)$, B) $\frac{1}{12}\sin\left(3x^4\right)$, C) $\frac{1}{12}x\sin(3x) + \frac{1}{36}\cos(3x)$, D) $\frac{1}{3}x\sin(3x) + \frac{1}{9}\cos(3x)$, E) $\frac{4\sin\left(x^5\right)}{5}$

(11) Mennyi $\int \frac{3}{4^2+3^2x} + \sin(3x) + e^{-4x}\,dx$?

    A) $-\frac{e^{-4x}}{4} - \frac{1}{3}\cos(3x) + \frac{1}{3}\tan^{-1}\left(\frac{3x}{4}\right)$
    B) $-\frac{e^{-4x}}{4} - \frac{1}{3}\cos(3x) + \frac{1}{4}\tan^{-1}\left(\frac{3x}{4}\right)$
    C) $-\frac{e^{-4x}}{4} + \frac{1}{3}\cos(3x) + \frac{1}{4}\tan^{-1}\left(\frac{3x}{4}\right)$
    D) $-\frac{e^{-4x}}{4} - \frac{1}{3}\sin(3x) + \frac{3}{4}\tan^{-1}\left(\frac{3x}{4}\right)$
    E) $-e^{-4x} - \frac{1}{3}\cos(3x) + \frac{1}{4}\tan^{-1}\left(\frac{3x}{4}\right)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.70. **No.70.**

(1) Mennyi $\int_{-1}^{3} f(x)\,dx$, ha $f(x) = \begin{cases} 4+5x & \text{if } x < 0 \\ 3 & \text{if } x > 0. \end{cases}$?

A) $\frac{71}{2}$, B) $\frac{65}{2}$, C) $\frac{75}{2}$, D) $\frac{69}{2}$, E) $\frac{67}{2}$

(2) Mennyi $\int \frac{1}{x^4} + \frac{1}{3x^4} + \sqrt[3]{(2x)^3}\,dx$?

A) $\frac{82}{243x^3} + x^2$, B) $x^2 - \frac{248}{1215x^3}$, C) $x^2 - \frac{28}{81x^3}$, D) $2x^2 - \frac{82}{243x^3}$, E) $x^2 - \frac{4}{9x^3}$

(3) Mennyi $\int \frac{2}{5^2+4^2x} + \sin(4x) + e^{-5x}\,dx$?

A) $-\frac{e^{-5x}}{5} - \frac{1}{4}\cos(4x) + \frac{1}{8}\tan^{-1}\left(\frac{4x}{5}\right)$
B) $-\frac{e^{-5x}}{5} + \frac{1}{4}\cos(4x) + \frac{1}{10}\tan^{-1}\left(\frac{4x}{5}\right)$
C) $-\frac{e^{-5x}}{5} - \frac{1}{4}\cos(4x) + \frac{1}{10}\tan^{-1}\left(\frac{4x}{5}\right)$
D) $-\frac{e^{-5x}}{5} - \frac{1}{4}\sin(4x) + \frac{2}{5}\tan^{-1}\left(\frac{4x}{5}\right)$
E) $-e^{-5x} - \frac{1}{4}\cos(4x) + \frac{1}{10}\tan^{-1}\left(\frac{4x}{5}\right)$

(4) Mennyi $\int (2+4x)\sin(2x)\,dx$?

A) $\sin(2x) - 2x\cos(2x) - \cos(2x)$
B) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x) - \cos(2x)$
C) $\frac{1}{2}\sin(2x) - x\cos(2x) - \frac{1}{2}\cos(2x)$
D) $2x\sin(2x)$
E) $-\sin(2x) + 2x\cos(2x) - \cos(2x)$

(5) Keresd meg az $f(x) = x^2 - 11x + 29$ es az $g(x) = 1x + 5$ fuggvenyek altal bezart teruletet!

A) $\frac{5}{3}$, B) $\frac{2}{3}$, C) $\frac{8}{3}$, D) $\frac{7}{3}$, E) $\frac{4}{3}$

(6) $y' = 3x^2 + 3x + 3$, $y(5) = 5$. Mennyi $y(10)$?

A) $\frac{1999}{2}$, B) $\frac{2011}{2}$, C) $\frac{1997}{2}$, D) $\frac{2015}{2}$, E) $\frac{2005}{2}$

(7) Mennyi $\int \frac{3x+3}{1+1x^2}\,dx$?

A) $-3\log(x-1)$
B) 13.2
C) $\frac{3}{2}\log\left(x^2+1\right) - 3\tan^{-1}(x)$
D) $\frac{3}{2}\log\left(x^2+1\right) + 3\tan^{-1}(x)$
E) 17.3

(8) Mennyi $\int x^4 \cos(5x^5)\,dx$?

A) $\frac{1}{25}\sin\left(5x^5\right)$, B) $\frac{1}{5}x\sin(5x) + \frac{1}{25}\cos(5x)$, C) $\frac{4\sin\left(x^5\right)}{5}$, D) $\frac{1}{20}x\sin(5x) + \frac{1}{100}\cos(5x)$, E) $\frac{1}{20}\sin\left(5x^4\right)$

(9) Mennyi $\int x^5 \log(2x)\,dx$?

A) $\frac{1}{6}x^6\log(x) - \frac{x^6}{36}$, B) $\frac{1}{7}x^7\log(2x) - \frac{x^7}{49}$, C) $\frac{1}{3}x^6\log(2x) - \frac{x^6}{18}$, D) $\frac{1}{6}x^6\log(2x) - \frac{x^6}{36}$, E) $\frac{1}{5}x^5\log(2x) - \frac{x^5}{25}$

(10) Mennyi $\int x^3 \sin(3x^4)\,dx$?

A) $-\frac{1}{4}\cos\left(x^4\right)$
B) 13.2
C) $-\frac{1}{12}\cos\left(3x^4\right)$
D) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x)$
E) $-\frac{1}{9}\cos\left(3x^3\right)$

(11) Mennyi $\int_{-3}^{2} f(x)\,dx$, ha $f(x) = \begin{cases} 1 & \text{if } x < 0 \\ 2+2x & \text{if } x > 0. \end{cases}$?

A) 11, B) 12, C) 8, D) 9, E) 10

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.71. No.71.

(1) Mennyi $\int x^5 \log(5x)\,dx$?

    A) $\frac{1}{5}x^5\log(5x) - \frac{x^5}{25}$, B) $\frac{1}{6}x^6\log(x) - \frac{x^6}{36}$, C) $\frac{1}{6}x^6\log(5x) - \frac{x^6}{36}$, D) $\frac{5}{6}x^6\log(5x) - \frac{5x^6}{36}$, E) $\frac{1}{7}x^7\log(5x) - \frac{x^7}{49}$

(2) $y' = 2x^2 + 4x + 2$, $y(4) = 4$. Mennyi $y(10)$?

    A) 800, B) 808, C) 798, D) 801, E) 802

(3) Mennyi $\int (4 + 5x)\sin(4x)\,dx$?

    A) $\frac{5}{16}\sin(4x) - \frac{5}{4}x\cos(4x) - \cos(4x)$
    B) $-\frac{5}{16}\sin(4x) + \frac{5}{4}x\cos(4x) - \cos(4x)$
    C) $\frac{5}{64}\sin(4x) - \frac{5}{16}x\cos(4x) - \frac{1}{4}\cos(4x)$
    D) $\frac{5}{4}x\sin(4x) - \frac{11}{16}\cos(4x)$
    E) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x) - \cos(4x)$

(4) Mennyi $\int_{-3}^{-2} f(x)\,dx$, ha $f(x) = \begin{cases} 3 + 2x & \text{if } x < 0 \\ 4 & \text{if } x > 0. \end{cases}$?

    A) 2, B) 0, C) 1, D) 4, E) -1

(5) Mennyi $\int \frac{1}{x^5} + \frac{1}{2x^5} + \sqrt[5]{(2x)^4}\,dx$?

    A) $\frac{5}{9}2^{4/5}x^{9/5} + \frac{33}{128x^4}$, B) $\frac{5}{9}2^{4/5}x^{9/5} - \frac{3}{8x^4}$, C) $\frac{10}{9}2^{4/5}x^{9/5} - \frac{33}{128x^4}$, D) $\frac{5}{9}2^{4/5}x^{9/5} - \frac{67}{384x^4}$, E) $\frac{5}{9}2^{4/5}x^{9/5} - \frac{17}{64x^4}$

(6) Mennyi $\int \frac{4x+3}{1+1x^2}\,dx$?

    A) $2\log\left(x^2 + 1\right) - 3\tan^{-1}(x)$
    B) 13.2
    C) $-\frac{7}{2}\log(3(x - 1)) - \frac{1}{2}\log(-3(x + 1))$
    D) 17.3
    E) $2\log\left(x^2 + 1\right) + 3\tan^{-1}(x)$

(7) Mennyi $\int x^2\sin(3x^3)\,dx$?

    A) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x)$
    B) $-\frac{1}{9}\cos\left(3x^3\right)$
    C) $-\frac{1}{6}\cos\left(3x^2\right)$
    D) $-\frac{1}{3}\cos\left(x^3\right)$
    E) 13.2

(8) Mennyi $\int_{-2}^{4} f(x)\,dx$, ha $f(x) = \begin{cases} 4 & \text{if } x < 0 \\ 5 + 4x & \text{if } x > 0. \end{cases}$?

    A) 60, B) 55, C) 58, D) 57, E) 56

(9) Mennyi $\int \frac{2}{4^2 + 2^2 x} + \sin(5x) + e^{-3x}\,dx$?

    A) $-e^{-3x} - \frac{1}{5}\cos(5x) + \frac{1}{4}\tan^{-1}\left(\frac{x}{2}\right)$
    B) $-\frac{e^{-3x}}{3} + \frac{1}{5}\cos(5x) + \frac{1}{4}\tan^{-1}\left(\frac{x}{2}\right)$
    C) $-\frac{e^{-3x}}{3} - \frac{1}{5}\sin(5x) + \frac{1}{2}\tan^{-1}\left(\frac{x}{2}\right)$
    D) $-\frac{e^{-3x}}{3} - \frac{1}{5}\cos(5x) + \frac{1}{4}\tan^{-1}\left(\frac{x}{2}\right)$
    E) $-\frac{e^{-3x}}{3} - \frac{1}{5}\cos(5x) + \frac{1}{2}\tan^{-1}\left(\frac{x}{2}\right)$

(10) Keresd meg az $f(x) = x^2 - 12x + 15$ es az $g(x) = 5x + 5$ fuggvenyek altal bezart teruletet!

    A) $\frac{5}{2}$, B) $\frac{9}{2}$, C) $\frac{1}{2}$, D) $\frac{3}{2}$, E) $\frac{11}{2}$

(11) Mennyi $\int x^4\cos(2x^5)\,dx$?

    A) $\frac{4\sin(x^5)}{5}$, B) $\frac{1}{8}x\sin(2x) + \frac{1}{16}\cos(2x)$, C) $\frac{1}{10}\sin\left(2x^5\right)$, D) $\frac{1}{2}x\sin(2x) + \frac{1}{4}\cos(2x)$, E) $\frac{1}{8}\sin\left(2x^4\right)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.72. No.72.

(1) Mennyi $\int (4 + 3x)\sin(5x)\, dx$?

   A) $\frac{3}{5}x\sin(5x) - \frac{17}{25}\cos(5x)$
   B) $\frac{3}{25}\sin(5x) - \frac{3}{5}x\cos(5x) - \frac{4}{5}\cos(5x)$
   C) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \frac{4}{5}\cos(5x)$
   D) $\frac{3}{125}\sin(5x) - \frac{3}{25}x\cos(5x) - \frac{4}{25}\cos(5x)$
   E) $-\frac{3}{25}\sin(5x) + \frac{3}{5}x\cos(5x) - \frac{4}{5}\cos(5x)$

(2) Mennyi $\int x^5 \sin(3x^6)\, dx$?

   A) 13.2
   B) $-\frac{1}{15}\cos\left(3x^5\right)$
   C) $-\frac{1}{6}\cos\left(x^6\right)$
   D) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x)$
   E) $-\frac{1}{18}\cos\left(3x^6\right)$

(3) Mennyi $\int \frac{5x+2}{1+4x^2}\, dx$?

   A) $\frac{5}{2}\log\left(4x^2 + 1\right) + 4\tan^{-1}(2x)$
   B) $-\frac{9}{8}\log(2(2x - 1)) - \frac{1}{8}\log(-2(2x + 1))$
   C) $-\frac{9}{2}\log(8(2x - 1)) - \frac{1}{2}\log(-8(2x + 1))$
   D) $\frac{5}{8}\log\left(4x^2 + 1\right) - \tan^{-1}(2x)$
   E) $\frac{5}{8}\log\left(4x^2 + 1\right) + \tan^{-1}(2x)$

(4) Mennyi $\int x^5 \cos(4x^6)\, dx$?

   A) $\frac{1}{4}x\sin(4x) + \frac{1}{16}\cos(4x)$, B) $\frac{5\sin\left(x^6\right)}{6}$, C) $\frac{1}{20}\sin\left(4x^5\right)$, D) $\frac{1}{20}x\sin(4x) + \frac{1}{80}\cos(4x)$, E) $\frac{1}{24}\sin\left(4x^6\right)$

(5) Mennyi $\int x^5 \log(2x)\, dx$?

   A) $\frac{1}{3}x^6\log(2x) - \frac{x^6}{18}$, B) $\frac{1}{7}x^7\log(2x) - \frac{x^7}{49}$, C) $\frac{1}{5}x^5\log(2x) - \frac{x^5}{25}$, D) $\frac{1}{6}x^6\log(2x) - \frac{x^6}{36}$, E) $\frac{1}{6}x^6\log(x) - \frac{x^6}{36}$

(6) Mennyi $\int_{-1}^{1} f(x)\, dx$, ha $f(x) = \begin{cases} 2 + 3x & \text{if } x < 0 \\ 2 & \text{if } x > 0. \end{cases}$?

   A) $\frac{3}{2}$, B) $\frac{9}{2}$, C) $\frac{11}{2}$, D) $\frac{5}{2}$, E) $\frac{7}{2}$

(7) Mennyi $\int \frac{3}{2^2 + 2^2 x} + \sin(5x) + e^{-2x}\, dx$?

   A) $-e^{-2x} - \frac{1}{5}\cos(5x) + \frac{3}{4}\tan^{-1}(x)$
   B) 13.2
   C) $-\frac{e^{-2x}}{2} - \frac{1}{5}\cos(5x) + \frac{3}{4}\tan^{-1}(x)$
   D) $-\frac{e^{-2x}}{2} - \frac{1}{5}\sin(5x) + \frac{3}{2}\tan^{-1}(x)$
   E) $-\frac{e^{-2x}}{2} + \frac{1}{5}\cos(5x) + \frac{3}{4}\tan^{-1}(x)$

(8) $y' = 1x^2 + 4x + 5$, $y(1) = 2$. Mennyi $y(10)$?
   A) 574, B) 568, C) 570, D) 572, E) 578

(9) Mennyi $\int \frac{1}{x^2} + \frac{1}{4x^4} + \sqrt[5]{(4x)^2}\, dx$?

   A) $\frac{5}{7}2^{4/5}x^{7/5} + \frac{1}{768x^3} + \frac{1}{x}$, B) $\frac{5}{7}2^{4/5}x^{7/5} - \frac{1}{768x^3} - \frac{1}{3x}$, C) $\frac{20}{7}2^{4/5}x^{7/5} - \frac{1}{768x^3} - \frac{1}{x}$, D) $\frac{5}{7}2^{4/5}x^{7/5} - \frac{1}{192x^3} - \frac{1}{x}$, E) $\frac{5}{7}2^{4/5}x^{7/5} - \frac{1}{12x^3} - \frac{1}{x}$

(10) Mennyi $\int_{-4}^{0} f(x)\, dx$, ha $f(x) = \begin{cases} 1 & \text{if } x < 0 \\ 1 + 2x & \text{if } x > 0. \end{cases}$?

   A) 1, B) -1, C) 3, D) 2, E) 4

(11) Keresd meg az $f(x) = x^2 - 10x + 22$ es az $g(x) = 1x + 2$ fuggvenyek altal bezart teruletet!
   A) $\frac{1}{6}$, B) $\frac{5}{6}$, C) $\frac{7}{6}$, D) $\frac{13}{6}$, E) $\frac{19}{6}$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.73. **No.73.**

(1) Mennyi $\int x^5 \log(2x)\, dx$?

  A) $\frac{1}{5}x^5 \log(2x) - \frac{x^5}{25}$, B) $\frac{1}{6}x^6 \log(2x) - \frac{x^6}{36}$, C) $\frac{1}{6}x^6 \log(x) - \frac{x^6}{36}$, D) $\frac{1}{7}x^7 \log(2x) - \frac{x^7}{49}$, E) $\frac{1}{3}x^6 \log(2x) - \frac{x^6}{18}$

(2) Keresd meg az $f(x) = x^2 - 12x + 20$ es az $g(x) = 4x + 5$ fuggvenyek altal bezart teruletet!

  A) $\frac{11}{3}$, B) $\frac{1}{3}$, C) $\frac{4}{3}$, D) $\frac{7}{3}$, E) $\frac{5}{3}$

(3) Mennyi $\int_{-3}^{-2} f(x)\, dx$, ha $f(x) = \begin{cases} 5 + 3x & \text{if } x < 0 \\ 1 & \text{if } x > 0. \end{cases}$?

  A) -4, B) 0, C) 1, D) 2, E) -1

(4) Mennyi $\int_{-2}^{5} f(x)\, dx$, ha $f(x) = \begin{cases} 3 & \text{if } x < 0 \\ 4 + 2x & \text{if } x > 0. \end{cases}$?

  A) 49, B) 51, C) 46, D) 47, E) 48

(5) Mennyi $\int \frac{1}{x^2} + \frac{1}{4x^2} + \sqrt[2]{(5x)^5}\, dx$?

  A) $\frac{250}{7}\sqrt{5}x^{7/2} - \frac{17}{16x}$, B) $\frac{50}{7}\sqrt{5}x^{7/2} - \frac{19}{48x}$, C) $\frac{50}{7}\sqrt{5}x^{7/2} + \frac{17}{16x}$, D) 13.2, E) $\frac{50}{7}\sqrt{5}x^{7/2} - \frac{5}{4x}$

(6) Mennyi $\int \frac{5x+3}{1+1x^2}\, dx$?

  A) 17.3
  B) $\frac{5}{2}\log\left(x^2+1\right) + 3\tan^{-1}(x)$
  C) $-4\log(3(x-1)) - \log(-3(x+1))$
  D) $\frac{5}{2}\log\left(x^2+1\right) - 3\tan^{-1}(x)$
  E) 13.2

(7) Mennyi $\int \frac{3}{4^2+2^2 x} + \sin(3x) + e^{-3x}\, dx$?

  A) $-e^{-3x} - \frac{1}{3}\cos(3x) + \frac{3}{8}\tan^{-1}\left(\frac{x}{2}\right)$
  B) $-\frac{e^{-3x}}{3} - \frac{1}{3}\cos(3x) + \frac{3}{8}\tan^{-1}\left(\frac{x}{2}\right)$
  C) $-\frac{e^{-3x}}{3} - \frac{1}{3}\sin(3x) + \frac{3}{4}\tan^{-1}\left(\frac{x}{2}\right)$
  D) $-\frac{e^{-3x}}{3} - \frac{1}{3}\cos(3x) + \frac{3}{4}\tan^{-1}\left(\frac{x}{2}\right)$
  E) $-\frac{e^{-3x}}{3} + \frac{1}{3}\cos(3x) + \frac{3}{8}\tan^{-1}\left(\frac{x}{2}\right)$

(8) $y' = 5x^2 + 1x + 4$, $y(2) = 3$. Mennyi $y(10)$?

  A) $\frac{5185}{3}$, B) $\frac{5209}{3}$, C) $\frac{5188}{3}$, D) $\frac{5191}{3}$, E) $\frac{5179}{3}$

(9) Mennyi $\int x^5 \cos(5x^6)\, dx$?

  A) $\frac{1}{25}x \sin(5x) + \frac{1}{125}\cos(5x)$, B) $\frac{1}{25}\sin\left(5x^5\right)$, C) $\frac{1}{5}x \sin(5x) + \frac{1}{25}\cos(5x)$, D) $\frac{1}{30}\sin\left(5x^6\right)$, E) $\frac{5\sin\left(x^6\right)}{6}$

(10) Mennyi $\int (4 + 2x)\sin(2x)\, dx$?

  A) $-\frac{1}{2}\sin(2x) + x\cos(2x) - 2\cos(2x)$
  B) $x\sin(2x) - \frac{3}{2}\cos(2x)$
  C) $\frac{1}{2}\sin(2x) - x\cos(2x) - 2\cos(2x)$
  D) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x) - \cos(2x)$
  E) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x) - 2\cos(2x)$

(11) Mennyi $\int x^2 \sin(2x^3)\, dx$?

  A) $-\frac{1}{3}\cos\left(x^3\right)$
  B) 13.2
  C) $-\frac{1}{4}\cos\left(2x^2\right)$
  D) $-\frac{1}{6}\cos\left(2x^3\right)$
  E) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.74. **No.74.**

(1) Mennyi $\int x^3 \log(4x)\,dx$?

A) $x^4 \log(4x) - \frac{x^4}{4}$, B) $\frac{1}{4}x^4 \log(4x) - \frac{x^4}{16}$, C) $\frac{1}{5}x^5 \log(4x) - \frac{x^5}{25}$, D) $\frac{1}{4}x^4 \log(x) - \frac{x^4}{16}$, E) $\frac{1}{3}x^3 \log(4x) - \frac{x^3}{9}$

(2) Mennyi $\int \frac{4}{2^2+4^2x} + \sin(5x) + e^{-2x}\,dx$?

A) $-e^{-2x} - \frac{1}{5}\cos(5x) + \frac{1}{2}\tan^{-1}(2x)$

B) $-\frac{e^{-2x}}{2} - \frac{1}{5}\cos(5x) + \frac{1}{2}\tan^{-1}(2x)$

C) $-\frac{e^{-2x}}{2} + \frac{1}{5}\cos(5x) + \frac{1}{2}\tan^{-1}(2x)$

D) $-\frac{e^{-2x}}{2} - \frac{1}{5}\cos(5x) + \frac{1}{4}\tan^{-1}(2x)$

E) $-\frac{e^{-2x}}{2} - \frac{1}{5}\sin(5x) + 2\tan^{-1}(2x)$

(3) Mennyi $\int_{-4}^{-1} f(x)\,dx$, ha $f(x) = \begin{cases} 3+5x & \text{if } x < 0 \\ 4 & \text{if } x > 0. \end{cases}$?

A) 7, B) 8, C) 9, D) 12, E) 10

(4) Mennyi $\int \frac{1}{x^2} + \frac{1}{3x^2} + \sqrt[4]{(2x)^2}\,dx$?

A) $\frac{4}{3}\sqrt{2}x^{3/2} - \frac{10}{9x}$, B) $\frac{2}{3}\sqrt{2}x^{3/2} - \frac{4}{3x}$, C) 13.2, D) $\frac{2}{3}\sqrt{2}x^{3/2} + \frac{10}{9x}$, E) $\frac{2}{3}\sqrt{2}x^{3/2} - \frac{4}{9x}$

(5) $y' = 4x^2 + 2x + 1$, $y(1) = 4$. Mennyi $y(10)$?

A) 1436, B) 1434, C) 1435, D) 1444, E) 1437

(6) Mennyi $\int \frac{3x+2}{1+4x^2}\,dx$?

A) $\frac{3}{8}\log\left(4x^2+1\right) + \tan^{-1}(2x)$

B) $\frac{1}{8}\log(-2(2x+1)) - \frac{7}{8}\log(2(2x-1))$

C) $\frac{3}{8}\log\left(4x^2+1\right) - \tan^{-1}(2x)$

D) $\frac{1}{2}\log(-8(2x+1)) - \frac{7}{2}\log(8(2x-1))$

E) $\frac{3}{2}\log\left(4x^2+1\right) + 4\tan^{-1}(2x)$

(7) Mennyi $\int_{-1}^{5} f(x)\,dx$, ha $f(x) = \begin{cases} 5 & \text{if } x < 0 \\ 4+1x & \text{if } x > 0. \end{cases}$?

A) $\frac{67}{2}$, B) $\frac{69}{2}$, C) $\frac{75}{2}$, D) $\frac{71}{2}$, E) $\frac{65}{2}$

(8) Mennyi $\int (5+4x)\sin(4x)\,dx$?

A) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x) - \frac{5}{4}\cos(4x)$

B) $x\sin(4x) - \cos(4x)$

C) $-\frac{1}{4}\sin(4x) + x\cos(4x) - \frac{5}{4}\cos(4x)$

D) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x) - \frac{5}{16}\cos(4x)$

E) $\frac{1}{4}\sin(4x) - x\cos(4x) - \frac{5}{4}\cos(4x)$

(9) Mennyi $\int x^4 \cos(3x^5)\,dx$?

A) $\frac{1}{12}\sin\left(3x^4\right)$, B) $\frac{1}{15}\sin\left(3x^5\right)$, C) $\frac{1}{3}x\sin(3x) + \frac{1}{9}\cos(3x)$, D) $\frac{4\sin\left(x^5\right)}{5}$, E) $\frac{1}{12}x\sin(3x) + \frac{1}{36}\cos(3x)$

(10) Mennyi $\int x^3 \sin(4x^4)\,dx$?

A) $-\frac{1}{16}\cos\left(4x^4\right)$

B) $-\frac{1}{4}\cos\left(x^4\right)$

C) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x)$

D) $-\frac{1}{12}\cos\left(4x^3\right)$

E) 13.2

(11) Keresd meg az $f(x) = x^2 - 12x + 16$ es az $g(x) = 3x + 2$ fuggvenyek altal bezart teruletet!

A) $\frac{65}{6}$, B) $\frac{83}{6}$, C) $\frac{125}{6}$, D) $\frac{71}{6}$, E) $\frac{77}{6}$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.75. **No.75.**

(1) Mennyi $\int \frac{3}{3^2+5^2x} + \sin(5x) + e^{-2x}\,dx$?

    A) $-\frac{e^{-2x}}{2} - \frac{1}{5}\cos(5x) + \frac{3}{25}\tan^{-1}\left(\frac{5x}{3}\right)$
    B) $-\frac{e^{-2x}}{2} + \frac{1}{5}\cos(5x) + \frac{1}{5}\tan^{-1}\left(\frac{5x}{3}\right)$
    C) $-\frac{e^{-2x}}{2} - \frac{1}{5}\sin(5x) + \tan^{-1}\left(\frac{5x}{3}\right)$
    D) $-e^{-2x} - \frac{1}{5}\cos(5x) + \frac{1}{5}\tan^{-1}\left(\frac{5x}{3}\right)$
    E) $-\frac{e^{-2x}}{2} - \frac{1}{5}\cos(5x) + \frac{1}{5}\tan^{-1}\left(\frac{5x}{3}\right)$

(2) Mennyi $\int x^2 \log(4x)\,dx$?

    A) $\frac{1}{4}x^4\log(4x) - \frac{x^4}{16}$, B) $\frac{1}{2}x^2\log(4x) - \frac{x^2}{4}$, C) $\frac{4}{3}x^3\log(4x) - \frac{4x^3}{9}$, D) $\frac{1}{3}x^3\log(x) - \frac{x^3}{9}$, E) $\frac{1}{3}x^3\log(4x) - \frac{x^3}{9}$

(3) Mennyi $\int(5+4x)\sin(2x)\,dx$?

    A) $-\sin(2x) + 2x\cos(2x) - \frac{5}{2}\cos(2x)$
    B) $\sin(2x) - 2x\cos(2x) - \frac{5}{2}\cos(2x)$
    C) $\frac{1}{2}\sin(2x) - \frac{5}{2}\cos^2(x) - x\cos(2x)$
    D) $2x\sin(2x) - \frac{3}{2}\cos(2x)$
    E) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x) - \frac{5}{2}\cos(2x)$

(4) Mennyi $\int_{-1}^{3} f(x)\,dx$, ha $f(x) = \begin{cases} 4+3x & \text{if } x < 0 \\ 5 & \text{if } x > 0. \end{cases}$?

    A) $\frac{51}{2}$, B) $\frac{57}{2}$, C) $\frac{55}{2}$, D) $\frac{53}{2}$, E) $\frac{61}{2}$

(5) Keresd meg az $f(x) = x^2 - 9x + 8$ es az $g(x) = 2x + 2$ fuggvenyek altal bezart teruletet!

    A) $\frac{65}{6}$, B) $\frac{83}{6}$, C) $\frac{125}{6}$, D) $\frac{71}{6}$, E) $\frac{77}{6}$

(6) $y' = 5x^2 + 3x + 1$, $y(3) = 3$. Mennyi $y(10)$?

    A) $\frac{10567}{6}$, B) $\frac{10609}{6}$, C) $\frac{10555}{6}$, D) $\frac{10549}{6}$, E) $\frac{10573}{6}$

(7) Mennyi $\int x^3 \sin(5x^4)\,dx$?

    A) $-\frac{1}{15}\cos\left(5x^3\right)$
    B) $-\frac{1}{4}\cos\left(x^4\right)$
    C) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x)$
    D) $-\frac{1}{20}\cos\left(5x^4\right)$
    E) 13.2

(8) Mennyi $\int \frac{2x+5}{1+4x^2}\,dx$?

    A) $\log\left(4x^2+1\right) + 10\tan^{-1}(2x)$
    B) $\frac{1}{4}\log\left(4x^2+1\right) - \frac{5}{2}\tan^{-1}(2x)$
    C) $\log(-5(2x+1)) - \frac{3}{2}\log(5(2x-1))$
    D) $\frac{1}{4}\log\left(4x^2+1\right) + \frac{5}{2}\tan^{-1}(2x)$
    E) $4\log(-20(2x+1)) - 6\log(20(2x-1))$

(9) Mennyi $\int_{-3}^{4} f(x)\,dx$, ha $f(x) = \begin{cases} 5 & \text{if } x < 0 \\ 3+4x & \text{if } x > 0. \end{cases}$?

    A) 58, B) 57, C) 59, D) 54, E) 56

(10) Mennyi $\int x^2 \cos(2x^3)\,dx$?

    A) $\frac{1}{2}x\sin(2x) + \frac{1}{4}\cos(2x)$, B) $\frac{1}{4}x\sin(2x) + \frac{1}{8}\cos(2x)$, C) $\frac{1}{6}\sin\left(2x^3\right)$, D) $\frac{1}{4}\sin\left(2x^2\right)$, E) $\frac{2\sin\left(x^3\right)}{3}$

(11) Mennyi $\int \frac{1}{x^4} + \frac{1}{5x^5} + \sqrt[4]{(4x)^2}\,dx$?

    A) $\frac{16x^{3/2}}{3} - \frac{1}{12500x^4} - \frac{1}{3x^3}$, B) $\frac{4x^{3/2}}{3} - \frac{1}{12500x^4} - \frac{1}{5x^3}$, C) $\frac{4x^{3/2}}{3} - \frac{1}{20x^4} - \frac{1}{3x^3}$, D) $\frac{4x^{3/2}}{3} + \frac{1}{12500x^4} + \frac{1}{3x^3}$, E) $\frac{4x^{3/2}}{3} - \frac{1}{2500x^4} - \frac{1}{3x^3}$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.76. **No.76.**

(1) Mennyi $\int x^2 \log(2x)\, dx$?

  A) $\frac{2}{3}x^3 \log(2x) - \frac{2x^3}{9}$, B) $\frac{1}{3}x^3 \log(2x) - \frac{x^3}{9}$, C) $\frac{1}{2}x^2 \log(2x) - \frac{x^2}{4}$, D) $\frac{1}{4}x^4 \log(2x) - \frac{x^4}{16}$, E) $\frac{1}{3}x^3 \log(x) - \frac{x^3}{9}$

(2) Mennyi $\int \frac{5x+2}{1+1x^2}\, dx$?

  A) $\frac{5}{2}\log\left(x^2+1\right) - 2\tan^{-1}(x)$
  B) $-\frac{7}{2}\log(2(x-1)) - \frac{3}{2}\log(-2(x+1))$
  C) 13.2
  D) $\frac{5}{2}\log\left(x^2+1\right) + 2\tan^{-1}(x)$
  E) 17.3

(3) Mennyi $\int x^5 \sin(5x^6)\, dx$?

  A) 13.2
  B) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x)$
  C) $-\frac{1}{6}\cos\left(x^6\right)$
  D) $-\frac{1}{30}\cos\left(5x^6\right)$
  E) $-\frac{1}{25}\cos\left(5x^5\right)$

(4) $y' = 5x^2 + 2x + 5$, $y(5) = 4$. Mennyi $y(10)$?

  A) $\frac{4687}{3}$, B) $\frac{4672}{3}$, C) $\frac{4663}{3}$, D) $\frac{4678}{3}$, E) $\frac{4660}{3}$

(5) Mennyi $\int \frac{1}{x^4} + \frac{1}{5x^3} + \sqrt[5]{(2x)^2}\, dx$?

  A) $\frac{5}{7}2^{2/5}x^{7/5} - \frac{1}{3x^3} - \frac{1}{10x^2}$, B) $\frac{5}{7}2^{2/5}x^{7/5} + \frac{1}{3x^3} + \frac{1}{250x^2}$, C) $\frac{5}{7}2^{2/5}x^{7/5} - \frac{1}{3x^3} - \frac{1}{50x^2}$, D) $\frac{5}{7}2^{2/5}x^{7/5} - \frac{1}{5x^3} - \frac{1}{250x^2}$, E) $\frac{10}{7}2^{2/5}x^{7/5} - \frac{1}{3x^3} - \frac{1}{250x^2}$

(6) Mennyi $\int \frac{4}{2^2+5^2x} + \sin(2x) + e^{-4x}\, dx$?

  A) $-\frac{e^{-4x}}{4} - \frac{1}{2}\cos(2x) + \frac{2}{5}\tan^{-1}\left(\frac{5x}{2}\right)$
  B) $-\frac{e^{-4x}}{4} + \frac{1}{2}\cos(2x) + \frac{2}{5}\tan^{-1}\left(\frac{5x}{2}\right)$
  C) $-e^{-4x} - \frac{1}{2}\cos(2x) + \frac{2}{5}\tan^{-1}\left(\frac{5x}{2}\right)$
  D) $-\frac{e^{-4x}}{4} - \frac{1}{2}\cos(2x) + \frac{4}{25}\tan^{-1}\left(\frac{5x}{2}\right)$
  E) $-\frac{e^{-4x}}{4} - \frac{1}{2}\sin(2x) + 2\tan^{-1}\left(\frac{5x}{2}\right)$

(7) Mennyi $\int_{-4}^{-3} f(x)\, dx$, ha $f(x) = \begin{cases} 5+5x & \text{if } x<0 \\ 3 & \text{if } x>0. \end{cases}$?

  A) -1, B) -2, C) 0, D) 3, E) 1

(8) Mennyi $\int_{-1}^{5} f(x)\, dx$, ha $f(x) = \begin{cases} 2 & \text{if } x<0 \\ 2+2x & \text{if } x>0. \end{cases}$?

  A) 36, B) 37, C) 32, D) 35, E) 33

(9) Keresd meg az $f(x) = x^2 - 10x + 16$ es az $g(x) = 2x + 1$ fuggvenyek altal bezart teruletet!

  A) $\frac{5}{3}$, B) $\frac{2}{3}$, C) $\frac{1}{3}$, D) $\frac{7}{3}$, E) $\frac{4}{3}$

(10) Mennyi $\int (4+5x)\sin(5x)\, dx$?

  A) $\frac{1}{5}\sin(5x) - x\cos(5x) - \frac{4}{5}\cos(5x)$
  B) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \frac{4}{25}\cos(5x)$
  C) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \frac{4}{5}\cos(5x)$
  D) $-\frac{1}{5}\sin(5x) + x\cos(5x) - \frac{4}{5}\cos(5x)$
  E) $x\sin(5x) - \frac{3}{5}\cos(5x)$

(11) Mennyi $\int x^5 \cos(4x^6)\, dx$?

  A) $\frac{1}{20}x\sin(4x) + \frac{1}{80}\cos(4x)$, B) $\frac{5\sin\left(x^6\right)}{6}$, C) $\frac{1}{24}\sin\left(4x^6\right)$, D) $\frac{1}{4}x\sin(4x) + \frac{1}{16}\cos(4x)$, E) $\frac{1}{20}\sin\left(4x^5\right)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.77. **No.77.**

(1) Mennyi $\int \frac{4x+2}{1+1x^2}\, dx$?

     A) $-3\log(2(x-1)) - \log(-2(x+1))$

     B) $2\log\left(x^2+1\right) + 2\tan^{-1}(x)$

     C) 13.2

     D) 17.3

     E) $2\log\left(x^2+1\right) - 2\tan^{-1}(x)$

(2) Mennyi $\int x^2 \sin(3x^3)\, dx$?

     A) 13.2

     B) $-\frac{1}{9}\cos\left(3x^3\right)$

     C) $-\frac{1}{3}\cos\left(x^3\right)$

     D) $-\frac{1}{6}\cos\left(3x^2\right)$

     E) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x)$

(3) Mennyi $\int x^2 \log(4x)\, dx$?

     A) $\frac{1}{3}x^3 \log(4x) - \frac{x^3}{9}$, B) $\frac{1}{3}x^3 \log(x) - \frac{x^3}{9}$, C) $\frac{1}{2}x^2 \log(4x) - \frac{x^2}{4}$, D) $\frac{1}{4}x^4 \log(4x) - \frac{x^4}{16}$, E) $\frac{4}{3}x^3 \log(4x) - \frac{4x^3}{9}$

(4) Keresd meg az $f(x) = x^2 - 14x + 37$ es az $g(x) = 2x + 5$ fuggvenyek altal bezart teruletet!

     A) $\frac{17}{3}$, B) $\frac{8}{3}$, C) $\frac{11}{3}$, D) $\frac{5}{3}$, E) $\frac{32}{3}$

(5) Mennyi $\int \frac{4}{4^2+3^2x} + \sin(5x) + e^{-5x}\, dx$?

     A) $-\frac{e^{-5x}}{5} - \frac{1}{5}\cos(5x) + \frac{4}{9}\tan^{-1}\left(\frac{3x}{4}\right)$

     B) $-\frac{e^{-5x}}{5} - \frac{1}{5}\sin(5x) + \tan^{-1}\left(\frac{3x}{4}\right)$

     C) $-e^{-5x} - \frac{1}{5}\cos(5x) + \frac{1}{3}\tan^{-1}\left(\frac{3x}{4}\right)$

     D) $-\frac{e^{-5x}}{5} - \frac{1}{5}\cos(5x) + \frac{1}{3}\tan^{-1}\left(\frac{3x}{4}\right)$

     E) $-\frac{e^{-5x}}{5} + \frac{1}{5}\cos(5x) + \frac{1}{3}\tan^{-1}\left(\frac{3x}{4}\right)$

(6) Mennyi $\int_{-3}^{2} f(x)\, dx$, ha $f(x) = \begin{cases} 4 & \text{if } x < 0 \\ 5 + 5x & \text{if } x > 0. \end{cases}$?

     A) 31, B) 32, C) 29, D) 28, E) 27

(7) Mennyi $\int (4 + 5x)\sin(3x)\, dx$?

     A) $\frac{5}{3}x\sin(3x) - \frac{7}{9}\cos(3x)$

     B) $\frac{5}{27}\sin(3x) - \frac{5}{9}x\cos(3x) - \frac{4}{9}\cos(3x)$

     C) $\frac{5}{9}\sin(3x) - \frac{5}{3}x\cos(3x) - \frac{4}{3}\cos(3x)$

     D) $-\frac{5}{9}\sin(3x) + \frac{5}{3}x\cos(3x) - \frac{4}{3}\cos(3x)$

     E) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x) - \frac{4}{3}\cos(3x)$

(8) Mennyi $\int x^3 \cos(2x^4)\, dx$?

     A) $\frac{3\sin\left(x^4\right)}{4}$, B) $\frac{1}{2}x\sin(2x) + \frac{1}{4}\cos(2x)$, C) $\frac{1}{6}x\sin(2x) + \frac{1}{12}\cos(2x)$, D) $\frac{1}{8}\sin\left(2x^4\right)$, E) $\frac{1}{6}\sin\left(2x^3\right)$

(9) Mennyi $\int \frac{1}{x^3} + \frac{1}{5x^4} + \sqrt[3]{(5x)^4}\, dx$?

     A) $\frac{15}{7}\sqrt[3]{5}x^{7/3} + \frac{1}{1875x^3} + \frac{1}{2x^2}$, B) $\frac{75}{7}\sqrt[3]{5}x^{7/3} - \frac{1}{1875x^3} - \frac{1}{2x^2}$, C) $\frac{15}{7}\sqrt[3]{5}x^{7/3} - \frac{1}{15x^3} - \frac{1}{2x^2}$, D) $\frac{15}{7}\sqrt[3]{5}x^{7/3} - \frac{1}{375x^3} - \frac{1}{2x^2}$, E) $\frac{15}{7}\sqrt[3]{5}x^{7/3} - \frac{1}{1875x^3} - \frac{1}{4x^2}$

(10) Mennyi $\int_{-3}^{6} f(x)\, dx$, ha $f(x) = \begin{cases} 1 + 2x & \text{if } x < 0 \\ 2 & \text{if } x > 0. \end{cases}$?

     A) 48, B) 45, C) 46, D) 44, E) 43

(11) $y' = 2x^2 + 5x + 5$, $y(4) = 4$. Mennyi $y(10)$?

     A) 863, B) 858, C) 868, D) 861, E) 860

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.78. **No.78.**

(1) Keresd meg az $f(x) = x^2 - 14x + 33$ es az $g(x) = 3x + 5$ fuggvenyek altal bezart teruletet!

A) $\frac{7}{2}$, B) $\frac{1}{2}$, C) $\frac{3}{2}$, D) $\frac{5}{2}$, E) $\frac{9}{2}$

(2) Mennyi $\int x^4 \sin(2x^5)\,dx$?

A) $-\frac{1}{5}\cos\left(x^5\right)$
B) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x)$
C) $-\frac{1}{10}\cos\left(2x^5\right)$
D) 13.2
E) $-\frac{1}{8}\cos\left(2x^4\right)$

(3) Mennyi $\int x^2 \cos(5x^3)\,dx$?

A) $\frac{1}{15}\sin\left(5x^3\right)$, B) $\frac{1}{5}x\sin(5x) + \frac{1}{25}\cos(5x)$, C) $\frac{2\sin\left(x^3\right)}{3}$, D) $\frac{1}{10}\sin\left(5x^2\right)$, E) $\frac{1}{10}x\sin(5x) + \frac{1}{50}\cos(5x)$

(4) Mennyi $\int_{-3}^{3} f(x)\,dx$, ha $f(x) = \begin{cases} 3 & \text{if } x < 0 \\ 3 + 1x & \text{if } x > 0. \end{cases}$?

A) $\frac{37}{2}$, B) $\frac{35}{2}$, C) $\frac{39}{2}$, D) $\frac{41}{2}$, E) $\frac{45}{2}$

(5) Mennyi $\int \frac{1}{x^4} + \frac{1}{2x^2} + \sqrt[5]{(3x)^2}\,dx$?

A) $\frac{5}{7}3^{2/5}x^{7/5} + \frac{1}{3x^3} + \frac{1}{4x}$, B) $\frac{5}{7}3^{2/5}x^{7/5} - \frac{1}{3x^3} - \frac{1}{2x}$, C) 13.2, D) $\frac{5}{7}3^{2/5}x^{7/5} - \frac{1}{5x^3} - \frac{1}{4x}$, E) $\frac{15}{7}3^{2/5}x^{7/5} - \frac{1}{3x^3} - \frac{1}{4x}$

(6) Mennyi $\int x^2 \log(2x)\,dx$?

A) $\frac{1}{3}x^3\log(x) - \frac{x^3}{9}$, B) $\frac{1}{3}x^3\log(2x) - \frac{x^3}{9}$, C) $\frac{1}{4}x^4\log(2x) - \frac{x^4}{16}$, D) $\frac{1}{2}x^2\log(2x) - \frac{x^2}{4}$, E) $\frac{2}{3}x^3\log(2x) - \frac{2x^3}{9}$

(7) $y' = 3x^2 + 2x + 2$, $y(4) = 5$. Mennyi $y(10)$?

A) 1036, B) 1037, C) 1034, D) 1030, E) 1029

(8) Mennyi $\int \frac{3}{5^2 + 2^2 x} + \sin(4x) + e^{-5x}\,dx$?

A) $-e^{-5x} - \frac{1}{4}\cos(4x) + \frac{3}{10}\tan^{-1}\left(\frac{2x}{5}\right)$
B) $-\frac{e^{-5x}}{5} + \frac{1}{4}\cos(4x) + \frac{3}{10}\tan^{-1}\left(\frac{2x}{5}\right)$
C) $-\frac{e^{-5x}}{5} - \frac{1}{4}\cos(4x) + \frac{3}{4}\tan^{-1}\left(\frac{2x}{5}\right)$
D) $-\frac{e^{-5x}}{5} - \frac{1}{4}\cos(4x) + \frac{3}{10}\tan^{-1}\left(\frac{2x}{5}\right)$
E) $-\frac{e^{-5x}}{5} - \frac{1}{4}\sin(4x) + \frac{3}{5}\tan^{-1}\left(\frac{2x}{5}\right)$

(9) Mennyi $\int (4 + 5x)\sin(4x)\,dx$?

A) $\frac{1}{16}\sin(4x) - \frac{1}{4}x\cos(4x) - \cos(4x)$
B) $-\frac{5}{16}\sin(4x) + \frac{5}{4}x\cos(4x) - \cos(4x)$
C) $\frac{5}{64}\sin(4x) - \frac{5}{16}x\cos(4x) - \frac{1}{4}\cos(4x)$
D) $\frac{5}{4}x\sin(4x) - \frac{11}{16}\cos(4x)$
E) $\frac{5}{16}\sin(4x) - \frac{5}{4}x\cos(4x) - \cos(4x)$

(10) Mennyi $\int \frac{4x+4}{1+9x^2}\,dx$?

A) $\frac{4}{9}\log(-4(3x+1)) - \frac{8}{9}\log(4(3x-1))$
B) $\frac{2}{9}\log\left(9x^2 + 1\right) + \frac{4}{3}\tan^{-1}(3x)$
C) $\frac{2}{9}\log\left(9x^2 + 1\right) - \frac{4}{3}\tan^{-1}(3x)$
D) $4\log(3x+1) - 8\log(1-3x)$
E) $2\log\left(9x^2 + 1\right) + 12\tan^{-1}(3x)$

(11) Mennyi $\int_{-1}^{6} f(x)\,dx$, ha $f(x) = \begin{cases} 3 + 2x & \text{if } x < 0 \\ 3 & \text{if } x > 0. \end{cases}$?

A) 55, B) 57, C) 52, D) 54, E) 53

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.79. **No.79.**

(1) Mennyi $\int x^4 \sin(5x^5)\,dx$?

     A) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x)$
     B) $-\frac{1}{20}\cos\left(5x^4\right)$
     C) $-\frac{1}{25}\cos\left(5x^5\right)$
     D) 13.2
     E) $-\frac{1}{5}\cos\left(x^5\right)$

(2) Mennyi $\int_{-4}^{-1} f(x)\,dx$, ha $f(x) = \begin{cases} 3+1x & \text{if } x < 0 \\ 1 & \text{if } x > 0. \end{cases}$?

     A) -1, B) 1, C) 3, D) -2, E) 0

(3) Mennyi $\int \frac{1}{x^3} + \frac{1}{4x^4} + \sqrt[3]{(3x)^2}\,dx$?

     A) $\frac{3}{5}3^{2/3}x^{5/3} - \frac{1}{768x^3} - \frac{1}{4x^2}$, B) $\frac{3}{5}3^{2/3}x^{5/3} - \frac{1}{12x^3} - \frac{1}{2x^2}$, C) $\frac{3}{5}3^{2/3}x^{5/3} + \frac{1}{768x^3} + \frac{1}{2x^2}$, D) $\frac{9}{5}3^{2/3}x^{5/3} - \frac{1}{768x^3} - \frac{1}{2x^2}$, E) $\frac{3}{5}3^{2/3}x^{5/3} - \frac{1}{192x^3} - \frac{1}{2x^2}$

(4) Mennyi $\int x^5 \log(3x)\,dx$?

     A) $\frac{1}{5}x^5 \log(3x) - \frac{x^5}{25}$, B) $\frac{1}{6}x^6 \log(x) - \frac{x^6}{36}$, C) $\frac{1}{2}x^6 \log(3x) - \frac{x^6}{12}$, D) $\frac{1}{7}x^7 \log(3x) - \frac{x^7}{49}$, E) $\frac{1}{6}x^6 \log(3x) - \frac{x^6}{36}$

(5) Mennyi $\int x^2 \cos(3x^3)\,dx$?

     A) $\frac{1}{6}x\sin(3x) + \frac{1}{18}\cos(3x)$, B) $\frac{1}{9}\sin\left(3x^3\right)$, C) $\frac{1}{6}\sin\left(3x^2\right)$, D) $\frac{1}{3}x\sin(3x) + \frac{1}{9}\cos(3x)$, E) $\frac{2\sin\left(x^3\right)}{3}$

(6) Keresd meg az $f(x) = x^2 - 16x + 41$ es az $g(x) = 3x + 1$ fuggvenyek altal bezart teruletet!

     A) $\frac{1}{2}$, B) $\frac{7}{2}$, C) $\frac{11}{2}$, D) $\frac{3}{2}$, E) $\frac{9}{2}$

(7) $y' = 3x^2 + 1x + 4$, $y(1) = 3$. Mennyi $y(10)$?

     A) $\frac{2157}{2}$, B) $\frac{2163}{2}$, C) $\frac{2175}{2}$, D) $\frac{2161}{2}$, E) $\frac{2155}{2}$

(8) Mennyi $\int (2 + 2x)\sin(2x)\,dx$?

     A) $-\frac{1}{2}\sin(2x) + x\cos(2x) - \cos(2x)$
     B) $\frac{1}{2}\sin(2x) - x\cos(2x) - \cos(2x)$
     C) $x\sin(2x) - \frac{1}{2}\cos(2x)$
     D) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x) - \cos(2x)$
     E) $\frac{1}{4}\sin(2x) - \frac{1}{2}x\cos(2x) - \frac{1}{2}\cos(2x)$

(9) Mennyi $\int_{-2}^{2} f(x)\,dx$, ha $f(x) = \begin{cases} 2 & \text{if } x < 0 \\ 5+3x & \text{if } x > 0. \end{cases}$?

     A) 16, B) 17, C) 18, D) 15, E) 20

(10) Mennyi $\int \frac{4x+4}{1+9x^2}\,dx$?

     A) $\frac{4}{9}\log(-4(3x+1)) - \frac{8}{9}\log(4(3x-1))$
     B) $\frac{2}{9}\log\left(9x^2 + 1\right) + \frac{4}{3}\tan^{-1}(3x)$
     C) $\frac{2}{9}\log\left(9x^2 + 1\right) - \frac{4}{3}\tan^{-1}(3x)$
     D) $4\log(3x+1) - 8\log(1-3x)$
     E) $2\log\left(9x^2 + 1\right) + 12\tan^{-1}(3x)$

(11) Mennyi $\int \frac{3}{4^2+5^2x} + \sin(2x) + e^{-2x}\,dx$?

     A) $-\frac{e^{-2x}}{2} - \frac{1}{2}\sin(2x) + \frac{3}{4}\tan^{-1}\left(\frac{5x}{4}\right)$
     B) $-\frac{e^{-2x}}{2} - \frac{1}{2}\cos(2x) + \frac{3}{20}\tan^{-1}\left(\frac{5x}{4}\right)$
     C) $-\frac{e^{-2x}}{2} + \frac{1}{2}\cos(2x) + \frac{3}{20}\tan^{-1}\left(\frac{5x}{4}\right)$
     D) $-e^{-2x} - \frac{1}{2}\cos(2x) + \frac{3}{20}\tan^{-1}\left(\frac{5x}{4}\right)$
     E) $-\frac{e^{-2x}}{2} - \frac{1}{2}\cos(2x) + \frac{3}{25}\tan^{-1}\left(\frac{5x}{4}\right)$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

0.80. **No.80.**

(1) $y' = 5x^2 + 3x + 3$, $y(3) = 1$. Mennyi $y(10)$?

    A) $\frac{10645}{6}$, B) $\frac{10639}{6}$, C) $\frac{10621}{6}$, D) $\frac{10627}{6}$, E) $\frac{10681}{6}$

(2) Mennyi $\int_{-3}^{2} f(x)\,dx$, ha $f(x) = \begin{cases} 4 & \text{if } x < 0 \\ 3 + 2x & \text{if } x > 0. \end{cases}$?

    A) 20, B) 18, C) 21, D) 22, E) 17

(3) Mennyi $\int \frac{2x+2}{1+9x^2}\,dx$?

    A) $\frac{1}{9}\log\left(9x^2 + 1\right) + \frac{2}{3}\tan^{-1}(3x)$
    B) $\frac{1}{9}\log\left(9x^2 + 1\right) - \frac{2}{3}\tan^{-1}(3x)$
    C) $\log\left(9x^2 + 1\right) + 6\tan^{-1}(3x)$
    D) $\frac{2}{9}\log(-2(3x + 1)) - \frac{4}{9}\log(2(3x - 1))$
    E) $2\log(3x + 1) - 4\log(1 - 3x)$

(4) Mennyi $\int x^4 \cos(4x^5)\,dx$?

    A) $\frac{4\sin\left(x^5\right)}{5}$, B) $\frac{1}{4}x\sin(4x) + \frac{1}{16}\cos(4x)$, C) $\frac{1}{16}\sin\left(4x^4\right)$, D) $\frac{1}{16}x\sin(4x) + \frac{1}{64}\cos(4x)$, E) $\frac{1}{20}\sin\left(4x^5\right)$

(5) Mennyi $\int \frac{4}{5^2 + 4^2 x} + \sin(4x) + e^{-2x}\,dx$?

    A) $-\frac{e^{-2x}}{2} - \frac{1}{4}\sin(4x) + \frac{4}{5}\tan^{-1}\left(\frac{4x}{5}\right)$
    B) $-\frac{e^{-2x}}{2} - \frac{1}{4}\cos(4x) + \frac{1}{5}\tan^{-1}\left(\frac{4x}{5}\right)$
    C) $-\frac{e^{-2x}}{2} + \frac{1}{4}\cos(4x) + \frac{1}{5}\tan^{-1}\left(\frac{4x}{5}\right)$
    D) $-e^{-2x} - \frac{1}{4}\cos(4x) + \frac{1}{5}\tan^{-1}\left(\frac{4x}{5}\right)$
    E) $-\frac{e^{-2x}}{2} - \frac{1}{4}\cos(4x) + \frac{1}{4}\tan^{-1}\left(\frac{4x}{5}\right)$

(6) Mennyi $\int_{-3}^{1} f(x)\,dx$, ha $f(x) = \begin{cases} 2 + 5x & \text{if } x < 0 \\ 4 & \text{if } x > 0. \end{cases}$?

    A) $\frac{23}{2}$, B) $\frac{31}{2}$, C) $\frac{33}{2}$, D) $\frac{29}{2}$, E) $\frac{27}{2}$

(7) Keresd meg az $f(x) = x^2 - 6x + 11$ es az $g(x) = 1x + 5$ fuggvenyek altal bezart teruletet!

    A) $\frac{1}{6}$, B) $\frac{13}{6}$, C) $\frac{17}{6}$, D) $\frac{19}{6}$, E) $\frac{5}{6}$

(8) Mennyi $\int x^5 \log(5x)\,dx$?

    A) $\frac{1}{5}x^5\log(5x) - \frac{x^5}{25}$, B) $\frac{1}{6}x^6\log(5x) - \frac{x^6}{36}$, C) $\frac{1}{6}x^6\log(x) - \frac{x^6}{36}$, D) $\frac{5}{6}x^6\log(5x) - \frac{5x^6}{36}$, E) $\frac{1}{7}x^7\log(5x) - \frac{x^7}{49}$

(9) Mennyi $\int x^5 \sin(3x^6)\,dx$?

    A) $-\frac{1}{6}\cos\left(x^6\right)$
    B) $-\frac{1}{15}\cos\left(3x^5\right)$
    C) 13.2
    D) $-\frac{1}{18}\cos\left(3x^6\right)$
    E) $\frac{1}{9}\sin(3x) - \frac{1}{3}x\cos(3x)$

(10) Mennyi $\int (4 + 5x)\sin(5x)\,dx$?

    A) $\frac{1}{5}\sin(5x) - x\cos(5x) - \frac{4}{5}\cos(5x)$
    B) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \frac{4}{5}\cos(5x)$
    C) $x\sin(5x) - \frac{3}{5}\cos(5x)$
    D) $-\frac{1}{5}\sin(5x) + x\cos(5x) - \frac{4}{5}\cos(5x)$
    E) $\frac{1}{25}\sin(5x) - \frac{1}{5}x\cos(5x) - \frac{4}{25}\cos(5x)$

(11) Mennyi $\int \frac{1}{x^5} + \frac{1}{2x^2} + \sqrt[2]{(3x)^4}\,dx$?

    A) $-\frac{1}{4x^4} + 3x^3 - \frac{1}{2x}$, B) 13.2, C) $\frac{1}{4x^4} + 3x^3 + \frac{1}{4x}$, D) $-\frac{1}{6x^4} + 3x^3 - \frac{1}{4x}$, E) $-\frac{1}{4x^4} + 9x^3 - \frac{1}{4x}$

1^2:   , 2^2:   , 3^2:   , 4^2:   , 5^2:   , 6^2:   , 7^2:   , 8^2:   , 9^2:   , 10^2:   , 11^2:   ,

Megoldas

	1^2	2^2	3^2	4^2	5^2	6^2	7^2	8^2	9^2	10^2	11^2
1	D	C	D	A	C	C	D	B	B	E	D
2	B	B	E	D	A	A	A	A	B	C	D
3	B	C	D	E	C	D	D	C	D	D	D
4	E	B	E	B	D	D	C	C	B	A	A
5	E	B	B	A	B	D	B	A	B	B	E
6	B	C	C	E	B	B	E	E	E	D	C
7	C	A	B	A	C	C	C	C	B	E	A
8	D	A	C	A	A	D	C	E	C	D	B
9	E	D	A	E	A	B	C	E	C	C	D
10	B	B	B	E	D	B	D	E	C	C	E
11	C	C	E	D	E	B	E	A	E	E	D
12	E	B	E	A	D	B	A	B	B	B	C
13	D	B	D	E	B	B	A	C	B	E	E
14	A	A	C	D	A	A	E	D	A	A	D
15	C	E	D	E	E	E	A	E	B	C	A
16	E	D	B	A	B	D	D	C	A	B	B
17	B	B	D	C	B	A	C	E	A	E	D
18	B	C	B	D	A	D	C	C	E	E	A
19	C	D	C	E	C	C	C	D	E	B	E
20	C	D	A	A	D	A	D	A	B	B	E
21	B	D	B	A	A	C	D	A	B	C	E
22	E	A	B	B	E	A	E	C	E	C	E
23	E	C	E	C	E	A	A	D	A	D	B
24	D	B	C	C	E	A	C	C	E	D	B
25	C	C	A	A	A	D	D	D	D	C	E
26	E	C	B	A	A	C	B	A	D	D	A
27	D	A	B	C	B	D	C	C	B	E	B
28	B	C	C	E	D	E	B	E	E	C	B
29	E	E	B	A	D	C	E	E	B	B	E
30	A	C	A	E	B	D	D	E	A	D	E
31	E	D	A	D	A	E	D	C	D	E	A
32	E	E	A	E	E	A	C	D	B	B	A
33	E	A	E	B	E	B	C	A	C	E	E
34	A	A	C	A	C	B	A	E	A	B	C
35	B	D	A	B	A	C	D	A	B	D	C
36	B	D	A	B	B	D	B	B	B	E	E
37	B	E	A	A	A	B	B	C	E	E	B
38	E	B	C	E	B	A	D	C	A	B	D
39	B	C	A	D	B	D	C	D	B	C	D
40	C	B	D	C	A	B	A	C	C	E	E
41	A	E	E	A	B	C	A	A	E	A	A
42	C	B	B	B	A	B	D	C	E	B	D
43	E	B	A	A	E	A	E	C	B	A	A
44	C	C	E	E	C	E	B	E	A	E	D
45	E	C	D	A	B	E	B	D	A	B	B
46	B	D	E	E	C	A	A	E	A	A	D
47	C	D	D	E	A	B	D	C	B	E	C
48	A	D	D	E	C	C	E	A	E	E	A
49	C	E	A	E	A	E	E	A	D	A	C
50	C	E	E	B	A	D	B	D	C	D	E
51	B	B	D	A	A	A	D	E	D	C	B
52	C	E	A	D	D	D	E	C	B	E	A
53	E	A	B	D	A	E	B	C	E	C	B
54	A	B	E	E	E	B	D	C	A	B	D
55	A	B	A	A	E	B	A	E	B	D	D

56	1^2:D,	2^2:E,	3^2:E,	4^2:A,	5^2:A,	6^2:D,	7^2:C,	8^2:E,	9^2:E,	10^2:A,	11^2:E,
57	1^2:B,	2^2:E,	3^2:D,	4^2:D,	5^2:E,	6^2:E,	7^2:A,	8^2:C,	9^2:A,	10^2:C,	11^2:A,
58	1^2:C,	2^2:B,	3^2:C,	4^2:B,	5^2:E,	6^2:A,	7^2:E,	8^2:E,	9^2:E,	10^2:A,	11^2:A,
59	1^2:A,	2^2:E,	3^2:E,	4^2:A,	5^2:A,	6^2:E,	7^2:D,	8^2:D,	9^2:C,	10^2:A,	11^2:C,
60	1^2:B,	2^2:B,	3^2:C,	4^2:C,	5^2:A,	6^2:D,	7^2:B,	8^2:B,	9^2:A,	10^2:B,	11^2:A,
61	1^2:C,	2^2:B,	3^2:A,	4^2:D,	5^2:C,	6^2:D,	7^2:D,	8^2:D,	9^2:E,	10^2:C,	11^2:D,
62	1^2:E,	2^2:E,	3^2:D,	4^2:E,	5^2:C,	6^2:A,	7^2:C,	8^2:A,	9^2:E,	10^2:A,	11^2:A,
63	1^2:B,	2^2:B,	3^2:B,	4^2:D,	5^2:B,	6^2:E,	7^2:D,	8^2:B,	9^2:D,	10^2:D,	11^2:E,
64	1^2:D,	2^2:E,	3^2:C,	4^2:D,	5^2:E,	6^2:B,	7^2:D,	8^2:C,	9^2:E,	10^2:E,	11^2:C,
65	1^2:D,	2^2:A,	3^2:D,	4^2:D,	5^2:B,	6^2:B,	7^2:E,	8^2:C,	9^2:D,	10^2:D,	11^2:E,
66	1^2:D,	2^2:C,	3^2:E,	4^2:C,	5^2:E,	6^2:D,	7^2:B,	8^2:C,	9^2:E,	10^2:C,	11^2:B,
67	1^2:B,	2^2:C,	3^2:B,	4^2:E,	5^2:E,	6^2:D,	7^2:E,	8^2:E,	9^2:B,	10^2:B,	11^2:E,
68	1^2:D,	2^2:D,	3^2:C,	4^2:C,	5^2:C,	6^2:E,	7^2:B,	8^2:C,	9^2:B,	10^2:A,	11^2:E,
69	1^2:C,	2^2:D,	3^2:C,	4^2:A,	5^2:E,	6^2:C,	7^2:E,	8^2:D,	9^2:B,	10^2:A,	11^2:B,
70	1^2:C,	2^2:E,	3^2:C,	4^2:A,	5^2:E,	6^2:D,	7^2:D,	8^2:A,	9^2:D,	10^2:C,	11^2:A,
71	1^2:C,	2^2:B,	3^2:A,	4^2:D,	5^2:B,	6^2:E,	7^2:B,	8^2:A,	9^2:D,	10^2:B,	11^2:C,
72	1^2:B,	2^2:E,	3^2:E,	4^2:E,	5^2:D,	6^2:C,	7^2:C,	8^2:E,	9^2:E,	10^2:E,	11^2:A,
73	1^2:B,	2^2:C,	3^2:C,	4^2:B,	5^2:E,	6^2:B,	7^2:B,	8^2:B,	9^2:D,	10^2:C,	11^2:D,
74	1^2:B,	2^2:B,	3^2:D,	4^2:B,	5^2:D,	6^2:A,	7^2:C,	8^2:E,	9^2:B,	10^2:A,	11^2:C,
75	1^2:E,	2^2:E,	3^2:B,	4^2:E,	5^2:C,	6^2:B,	7^2:D,	8^2:D,	9^2:C,	10^2:C,	11^2:C,
76	1^2:B,	2^2:D,	3^2:D,	4^2:A,	5^2:A,	6^2:A,	7^2:D,	8^2:B,	9^2:E,	10^2:A,	11^2:C,
77	1^2:B,	2^2:B,	3^2:A,	4^2:E,	5^2:D,	6^2:B,	7^2:C,	8^2:D,	9^2:C,	10^2:A,	11^2:C,
78	1^2:E,	2^2:C,	3^2:A,	4^2:E,	5^2:B,	6^2:B,	7^2:B,	8^2:D,	9^2:E,	10^2:B,	11^2:B,
79	1^2:C,	2^2:C,	3^2:B,	4^2:E,	5^2:B,	6^2:E,	7^2:C,	8^2:B,	9^2:E,	10^2:B,	11^2:B,
80	1^2:E,	2^2:D,	3^2:A,	4^2:E,	5^2:B,	6^2:C,	7^2:A,	8^2:B,	9^2:D,	10^2:A,	11^2:A,