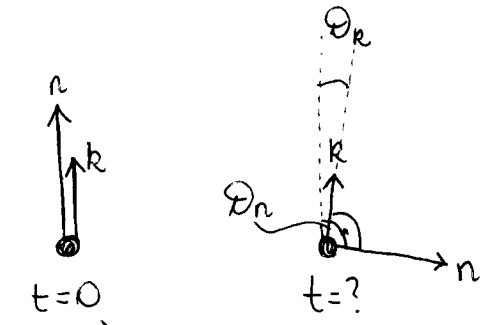
6.)



$$\vartheta = \frac{\beta}{2}t^2 + \omega_0 t + \vartheta_0$$

$\vartheta_n = \vartheta_k = 0$ $\qquad$ $\vartheta_n - \vartheta_k = \frac{\pi}{2}$ $\qquad$ $\vartheta = \omega t$ $\quad (\beta = 0$ és $\vartheta_0 = 0)$

$$\vartheta_n - \vartheta_k = \omega_n t - \omega_k t = (\omega_n - \omega_k)t = \frac{\pi}{2}$$

$$\omega_n = \frac{2\pi}{3600s} = \frac{\pi}{1800s} \qquad \omega_k = \frac{2\pi}{12 \cdot 3600s} = \frac{\pi}{21600s}$$

$$\left(\frac{\pi}{1800} - \frac{\pi}{21600}\right)t = \frac{\pi}{2}$$

$$\frac{11}{21600}t = \frac{1}{2}$$

$$t = \frac{21600}{22}s = 981{,}8s = \underline{16p21{,}8s} \text{ (12 óra után)}$$