

```
octave:1> x=[0 5 3]'
```

```
x =
```

```
0
5
3
```

```
octave:2> x(1)=0*x(1)+0.2*x(2)+0.3*x(3)+(-2.5)
```

```
x =
```

```
-0.6000
5.0000
3.0000
```

```
octave:3> x(2)=-0.4*x(1)+0*x(2)+0.2*x(3)+0
```

```
x =
```

```
-0.6000
0.8400
3.0000
```

```
octave:4> x(3)=0.25*x(1)+0.25*x(2)+0*x(3)+1.25
```

```
x =
```

```
-0.6000
0.8400
1.3100
```

```
octave:5> x(1)=0*x(1)+0.2*x(2)+0.3*x(3)+(-2.5)
```

```
x =
```

```
-1.9390
0.8400
1.3100
```

```
octave:6> x(2)=-0.4*x(1)+0*x(2)+0.2*x(3)+0
```

```
x =
```

```
-1.9390
1.0376
1.3100
```

```
octave:7> x(3)=0.25*x(1)+0.25*x(2)+0*x(3)+1.25
```

```
x =
```

```
-1.9390
1.0376
1.0247
```

```
octave:8> x(1)=0*x(1)+0.2*x(2)+0.3*x(3)+(-2.5)
```

```
x =
```

```
-1.9851  
1.0376  
1.0247
```

```
octave:9> x(2)=-0.4*x(1)+0*x(2)+0.2*x(3)+0  
x =
```

```
-1.9851  
0.9990  
1.0247
```

```
octave:10> x(3)=0.25*x(1)+0.25*x(2)+0*x(3)+1.25  
x =
```

```
-1.9851  
0.9990  
1.0035
```

```
octave:11> x(1)=0*x(1)+0.2*x(2)+0.3*x(3)+(-2.5)  
x =
```

```
-1.9992  
0.9990  
1.0035
```

```
octave:12> x(2)=-0.4*x(1)+0*x(2)+0.2*x(3)+0  
x =
```

```
-1.9992  
1.0004  
1.0035
```

```
octave:13> x(3)=0.25*x(1)+0.25*x(2)+0*x(3)+1.25  
x =
```

```
-1.9992  
1.0004  
1.0003
```

```
octave:14> x(1)=0*x(1)+0.2*x(2)+0.3*x(3)+(-2.5)  
x =
```

```
-1.9998  
1.0004  
1.0003
```

```
octave:15> x(2)=-0.4*x(1)+0*x(2)+0.2*x(3)+0  
x =
```

```
-1.9998
```

```
1.0000
1.0003
```

```
octave:16> x(3)=0.25*x(1)+0.25*x(2)+0*x(3)+1.25
x =
```

```
-1.9998
1.0000
1.0000
```

```
octave:17> x(1)=0*x(1)+0.2*x(2)+0.3*x(3)+(-2.5)
x =
```

```
-2.0000
1.0000
1.0000
```

```
octave:18> x(2)=-0.4*x(1)+0*x(2)+0.2*x(3)+0
x =
```

```
-2.0000
1.0000
1.0000
```

```
octave:19> x(3)=0.25*x(1)+0.25*x(2)+0*x(3)+1.25
x =
```

```
-2.0000
1.0000
1.0000
```

```
octave:20> function x=seidel(A,b,x0,hiba)
[n,m]=size(A)
for i=1:n
    B(i,:)=A(i,+)/(-A(i,i))
    B(i,i)=0
    c(i)=b(i)/A(i,i)
endfor
c=c'
q=norm(B,inf)
if q<1 & n==m
    i=1
    x(1)=B(1,:)*x0+c(1)
    for j=2:n
        x(j)=B(j,1:j-1)*x(1:j-1)'+B(j,j:n)*x0(j:n)+c(j)
    endfor
    x=x'
    while q/(1-q)*norm(x-x0,inf)>hiba
        i=i+1
        x0=x;
        x(1)=B(1,:)*x0+c(1);
```

```

        for j=2:n
            x(j)=B(j,1:j-1)*x(1:j-1)+B(j,j:n)*x0(j:n)+c(j);
        endfor
        x
    endwhile
    else disp('az együtthatómátrix nem négyzetes vagy diagonálisan domináns')
endif
endfunction
NOTICE: Due to inactivity, your session will expire in five minutes.
Octave Exited. Message: Session Timeout

```

```
octave:1> A=[-10 2 3;2 5 -1;-1 -1 4]
```

```
A =
```

```

-10    2    3
  2    5   -1
 -1   -1    4

```

```
octave:2> b=[25 0 5]'
```

```
b =
```

```

25
 0
 5

```

```
octave:3> x0=[0 5 3]'
```

```
x0 =
```

```

0
5
3

```

```
octave:4> seidel(A,b,x0,0.02)
```

```
error: 'seidel' undefined near line 1, column 1
```

```
octave:5> function x=seidel(A,b,x0,hiba)
```

```

[n,m]=size(A)
for i=1:n
    B(i,:)=A(i,+)/(-A(i,i))
    B(i,i)=0
    c(i)=b(i)/A(i,i)
endfor
c=c'
q=norm(B,inf)
if q<1 & n==m
    i=1
    x(1)=B(1,:)*x0+c(1)
    for j=2:n
        x(j)=B(j,1:j-1)*x(1:j-1)'+B(j,j:n)*x0(j:n)+c(j)
    endfor
    x=x'
    while q/(1-q)*norm(x-x0,inf)>hiba
        i=i+1
    endwhile
endfunction

```

```

        x0=x;
        x(1)=B(1,:)*x0+c(1);
        for j=2:n
            x(j)=B(j,1:j-1)*x(1:j-1)+B(j,j:n)*x0(j:n)+c(j);
        endfor
        x
    endwhile
    else disp('az együtthatómátrix nem négyzetes vagy diagonálisan domináns')
endif
endfunction

```

```

octave:6> seidel(A,b,x0,0.02)

```

```

n = 3

```

```

m = 3

```

```

B =

```

```

    -1.0000    0.2000    0.3000

```

```

B =

```

```

         0    0.2000    0.3000

```

```

c = -2.5000

```

```

B =

```

```

         0    0.2000    0.3000
    -0.4000   -1.0000    0.2000

```

```

B =

```

```

         0    0.2000    0.3000
    -0.4000         0    0.2000

```

```

c =

```

```

    -2.5000         0

```

```

B =

```

```

         0    0.2000    0.3000
    -0.4000         0    0.2000
    0.2500    0.2500   -1.0000

```

```

B =

```

```

         0    0.2000    0.3000
    -0.4000         0    0.2000
    0.2500    0.2500         0

```

```

c =

```

-2.5000 0 1.2500

c =

-2.5000
0
1.2500

q = 0.6000

i = 1

x = -0.6000

x =

-0.6000 0.8400

x =

-0.6000 0.8400 1.3100

x =

-0.6000
0.8400
1.3100

i = 2

x =

-1.9390
1.0376
1.0247

i = 3

x =

-1.9851
0.9990
1.0035

i = 4

x =

-1.9992
1.0004
1.0003

i = 5

x =

-1.9998

1.0000

1.0000

ans =

-1.9998

1.0000

1.0000