```
octave:1> #array declaration
a=[1 2 3 4 5 6 7 8 9 10]
a =

    1    2    3    4    5    6    7    8    9   10

octave:2> a=1:10
a =

    1    2    3    4    5    6    7    8    9   10

octave:3> c=1:2:10
c =

    1    3    5    7    9

octave:4> b=2:20
b =

 Columns 1 through 16:

     2     3     4     5     6     7     8     9    10    11    12    13
14    15    16    17

 Columns 17 through 19:

   18    19    20

octave:5> #Problem-1
x=[1 -2 4 5]
n=[0 1 2 3]
figure(4)
stem(n,x)
x =

   1  -2   4   5

n =

   0   1   2   3
```

```
-2-101234500.511.522.53


octave:9> #Problem-1
x=[1 2 3 4 5]
n=[3 4 5 6 7]
figure(5)
stem(n,x)
x =

   1   2   3   4   5

n =

   3   4   5   6   7



octave:13> #Impulse function
x=[1 0 0 0 0 0]
n=[0 1 2 3 4 5]
figure(6)
stem(n,x)
x =

   1   0   0   0   0   0

n =

   0   1   2   3   4   5
```

00.20.40.60.81012345

```
octave:17> #Unit step signal - continuous
t=0:5;
ut=[1 1 1 1 1 1];
plot(t,ut)
```

```
octave:20> #Unit step signal - discrete
n=0:5;
ut1=[1 1 1 1 1 1];
stem(n,ut1)
```

```
octave:23> #u(n)
n=0:3;
x1=[1 1 1 1];
stem(n,x1)
x2=[0 0 0 1];
stem(n,x2)
x=x1+x2;
subplot(2,2,1)
stem(n,x)
```

```
octave:31> #u(n)+u(n-3)
n=0:5;
x=(n>=0)+(n>=3)
subplot(2,2,1)
stem(n,x)
x =
```

```
   1   1   1   2   2   2
```

```
00.511.5200.511.522.53
```

```
00.511.52012345
```

```
octave:35> #u(n)-u(n-2)
n=0:5;
x=(n>=0)-(n>=3)
subplot(2,2,1)
stem(n,x)
x =

   1   1   1   0   0   0
```

```
octave:39> #Exponential signal
#when alpha > 0
n=-100:100;
alpha=0;
xn=alpha.^n;
figure(7)
stem(n,xn)
plot(n,xn)
```

```
octave:45> #Exponential signal
#when alpha > 0
n=-100:100;
alpha=0.9;
xn=alpha.^n;
figure(7)
```

```
stem(n,xn)
plot(n,xn)
```

```
octave:51> #Unit ramp signal
t=-10:10;
u=[zeros(1,10),ones(1,11)];
r=t.*u;
plot(t,r)
stem(t,r)
```

```
octave:56> #Unit parabolic signal - continuous
t=0:0.01:7;
p=0.5*(t.^2);
plot(t,p)
```

```
octave:59> #Unit parabolic signal - discrete
t=0:0.1:1;
p=0.5*(t.^2);
stem(t,p)
```

```
octave:86> #sinusoidal signal
#sin wave
pi
a=2;
f=3;
t=0:0.1:1;
xt=a*sin(2*pi*f*t)
figure(1)
stem(t,xt)
plot(t,xt)
```

```
octave:94> #sinusoidal signal
#cos wave
pi
```

```
a=2;
f=3;
t=0:0.01:1;
xt=a*cos(2*pi*f*t)
figure(1)
stem(t,xt)
plot(t,xt)
```

```
octave:102> #composite signal
t=0:0.001:1;
a1=2;
```

```
octave:114> a2=3;
a3=4;
f1=3;
f2=10;
f3=15;
xt1=a1*sin(2*pi*f1*t)
xt2=a2*sin(2*pi*f2*t)
xt3=a3*sin(2*pi*f3*t)
xt=xt1+xt2+xt3;
plot(t,xt)
```

```
octave:124> #cosine
pi
a=2;
f=3;
t=-1:0.01:1;
xt1=a*sin(2*pi*f*t)
subplot(3,1,1)
plot(t,xt1)
xt2=a*cos(2*pi*f*t)
subplot(3,1,2)
plot(t,xt2)
subplot(3,1,3)
plot(t,xt1,t,xt2)
```

```
octave:143> #even components of a signal
#xet=(xt+x(-t))/2
#u(t)
t=-10:10;
ut=[zeros(1,10), ones(1,11)];
plot(t,ut)


octave:148> u_reverse=fliplr(ut);
stem(t,u_reverse)
u_et=0.5*(ut+u_reverse);
stem(t,u_et)


octave:152> #Non deterministic
x=rand(1,100);
subplot(2,1,2);
plot(x)



octave:155> #deterministic
t=-10:0.02:10;
y=sin(t);
subplot(2,1,1);
plot(x)




octave:159> #deterministic
t=-10:0.02:10;
y=sin(t);
subplot(2,1,1);
plot(t,y)

octave:165> #convolution
xn=[1 2 3 4];
```

```
hn=[1 1 -1 1];
yn=conv(xn,hn)
yn =

   1   3   4   6   3  -1   4


octave:168> #amplitude scaling y(t)=c*x(t)
pi
a=2;
f=3;
t=0:0.001:1;
x=a*sin(2*pi*f*t)
plot(t,x)
x1=2.*x;
plot(t,x1)
c=4;
y=c.*x1;
plot(t,y)
```