

1. Rascunhe os seguintes sinais:

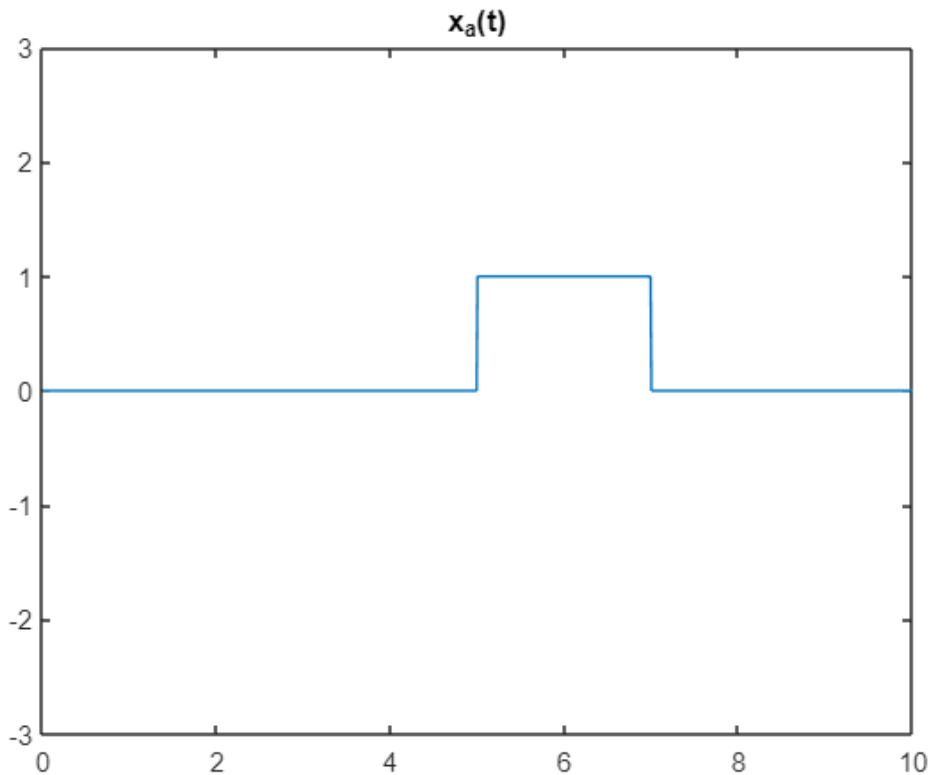
a) $u(t-5) - u(t-7)$

b) $u(t-5) + u(t-7)$

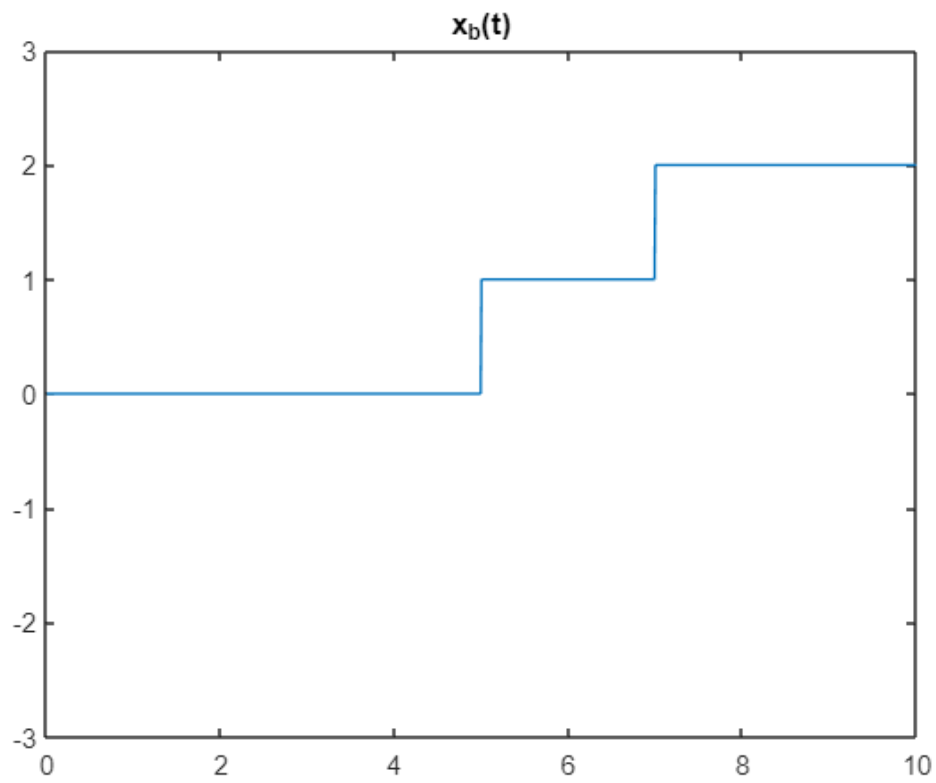
c) $t^2 [u(t-1) - u(t-2)]$

d) $(t-4) [u(t-2) - u(t-4)]$

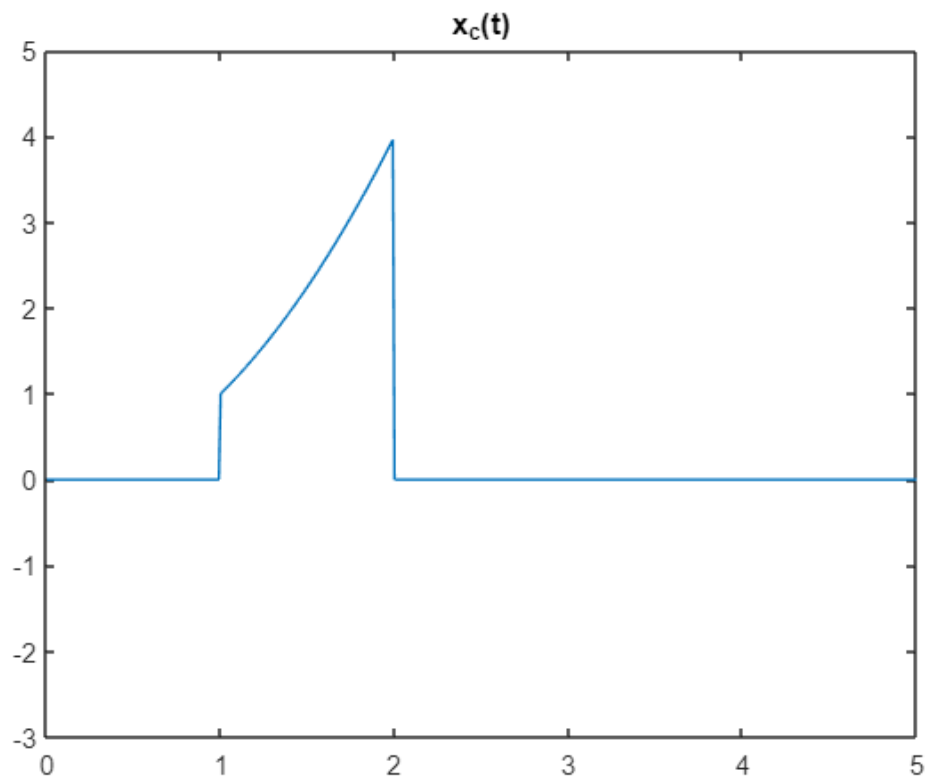
```
u=@(t) t>=0;
xa=@(t) u(t-5)-u(t-7);
xb=@(t) u(t-5)+u(t-7);
xc=@(t) (t.^2).*(u(t-1)-u(t-2));
xd=@(t) (t-4).*(u(t-2)-u(t-4));
t=-10:0.01:20;
figure(1)
plot(t, xa(t))
axis([0 10 -3 3])
title('x_a(t)')
```



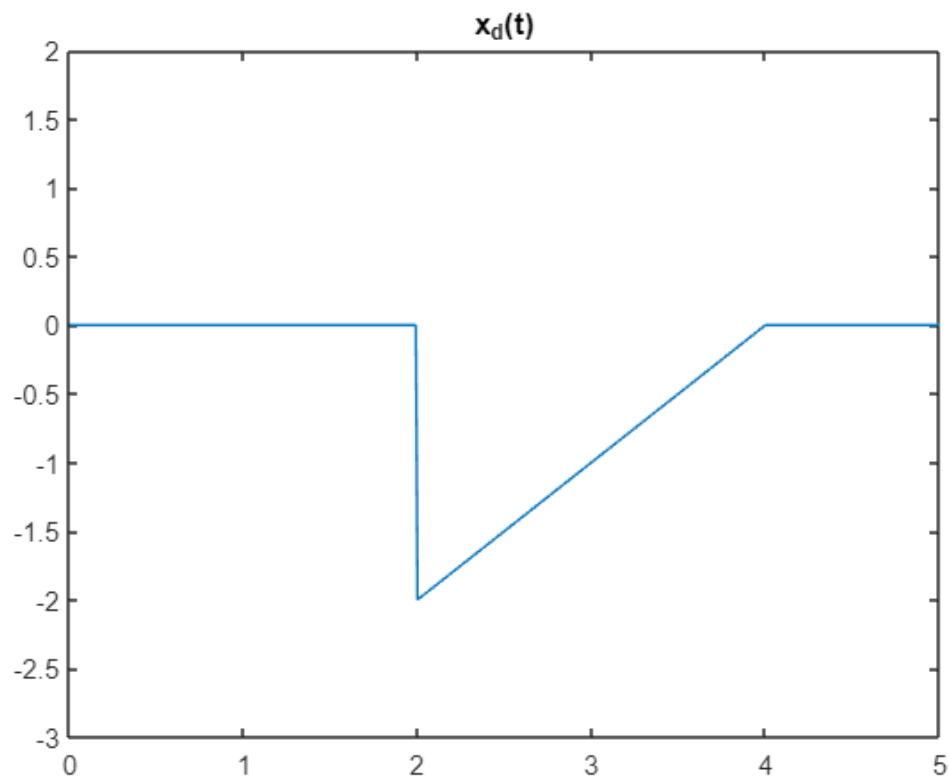
```
figure(2)
plot(t, xb(t))
axis([0 10 -3 3])
title('x_b(t)')
```



```
figure(3)
plot(t, xc(t))
axis([0 5 -3 5])
title('x_c(t)')
```

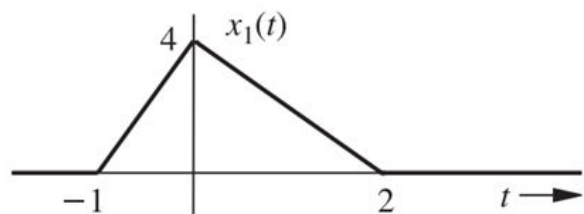


```
figure(4)
plot(t, xd(t))
axis([0 5 -3 2])
title('x_d(t)')
```

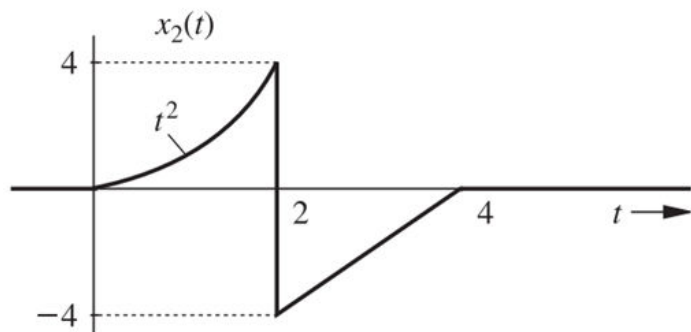


2. Expresse cada um dos sinais da Figura a seguir por uma única expressão para todo t .

a)



b)

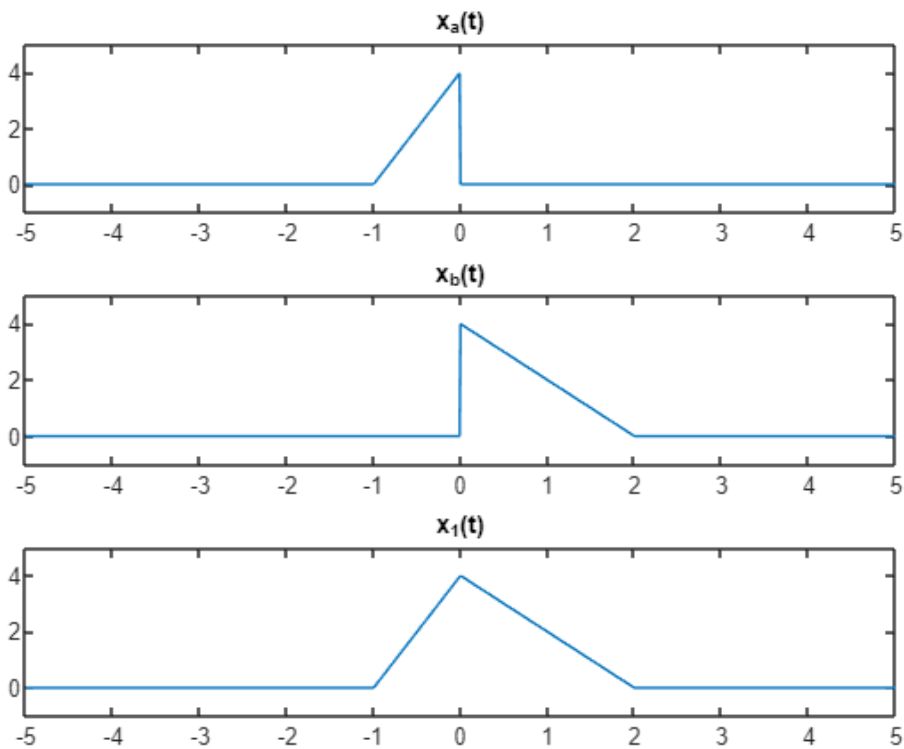


$u=@(t) \ t \geq 0;$

```

xa=@(t) (4*t+4).*(u(t+1)-u(t));
xb=@(t) (-2*t+4).*(u(t)-u(t-2));
x1=@(t) xa(t)+xb(t);
t=-10:0.01:20;
figure(5)
subplot(3,1,1)
plot(t, xa(t))
axis([-5 5 -1 5])
title('x_a(t)')
subplot(3,1,2)
plot(t, xb(t))
axis([-5 5 -1 5])
title('x_b(t)')
subplot(3,1,3)
plot(t, x1(t))
axis([-5 5 -1 5])
title('x_1(t)')

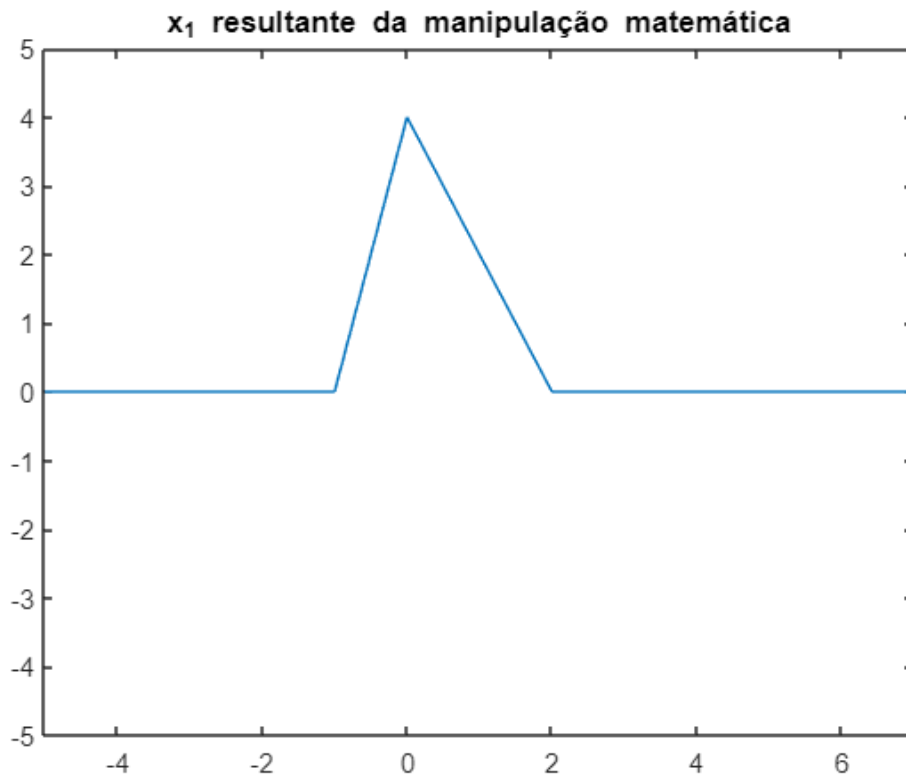
```



```

xfinal1=@(t) (4*t+4).*u(t+1)-6*t.*u(t)+(2*t-4).*u(t-2);
figure(6)
plot(t,xfinal1(t))
axis([-5 7 -5 5])
title('x_1 resultante da manipulação matemática');

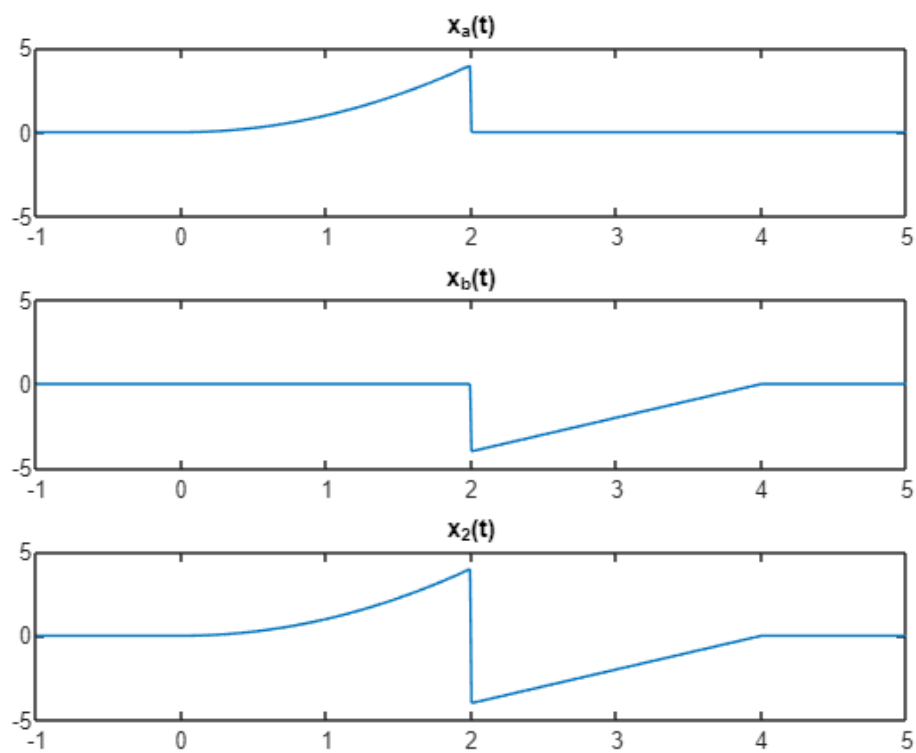
```



```

u=@(t) t>=0;
xa=@(t) (t.^2).*(u(t)-u(t-2));
xb=@(t) (2*t-8).*(u(t-2)-u(t-4));
x2=@(t) xa(t)+xb(t);
t=-10:0.01:20;
figure(7)
subplot(3,1,1)
plot(t, xa(t))
axis([-1 5 -5 5])
title('x_a(t)')
subplot(3,1,2)
plot(t, xb(t))
axis([-1 5 -5 5])
title('x_b(t)')
subplot(3,1,3)
plot(t, x2(t))
axis([-1 5 -5 5])
title('x_2(t)')

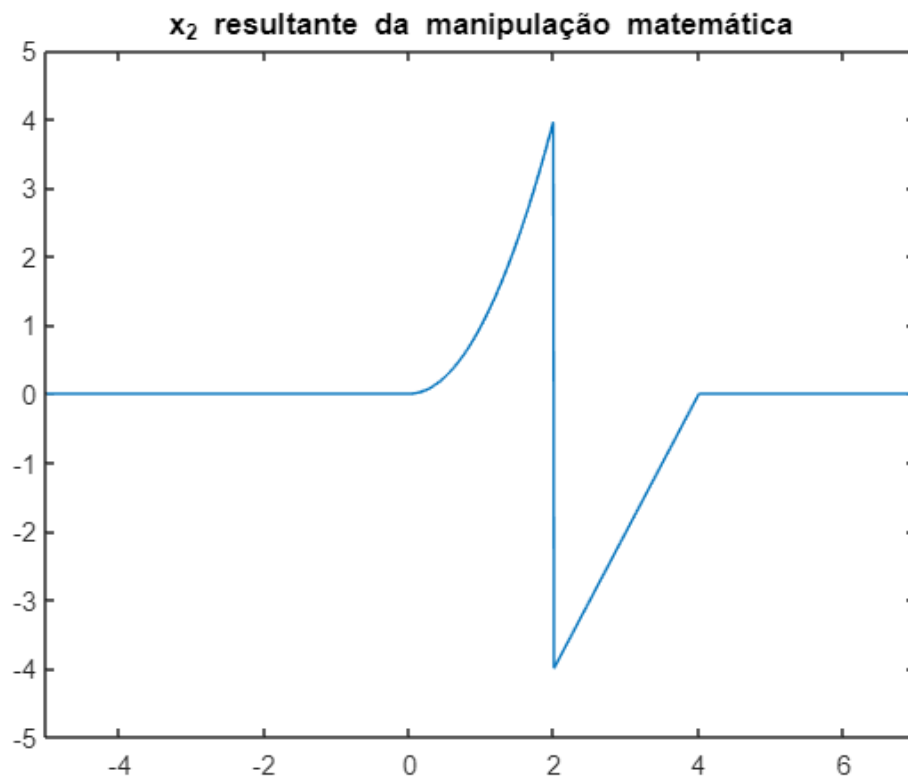
```



```

xfinal2=@(t)  t.^2.*u(t)-(t.^2-2*t+8).*u(t-2)-(2*t-8).*u(t-4);
figure(8)
plot(t,xfinal2(t))
axis([-5 7 -5 5])
title('x_2 resultante da manipulação matemática')

```



5. Rascunhe os seguintes sinais:

a) $u[n - 2] - u[n - 6]$

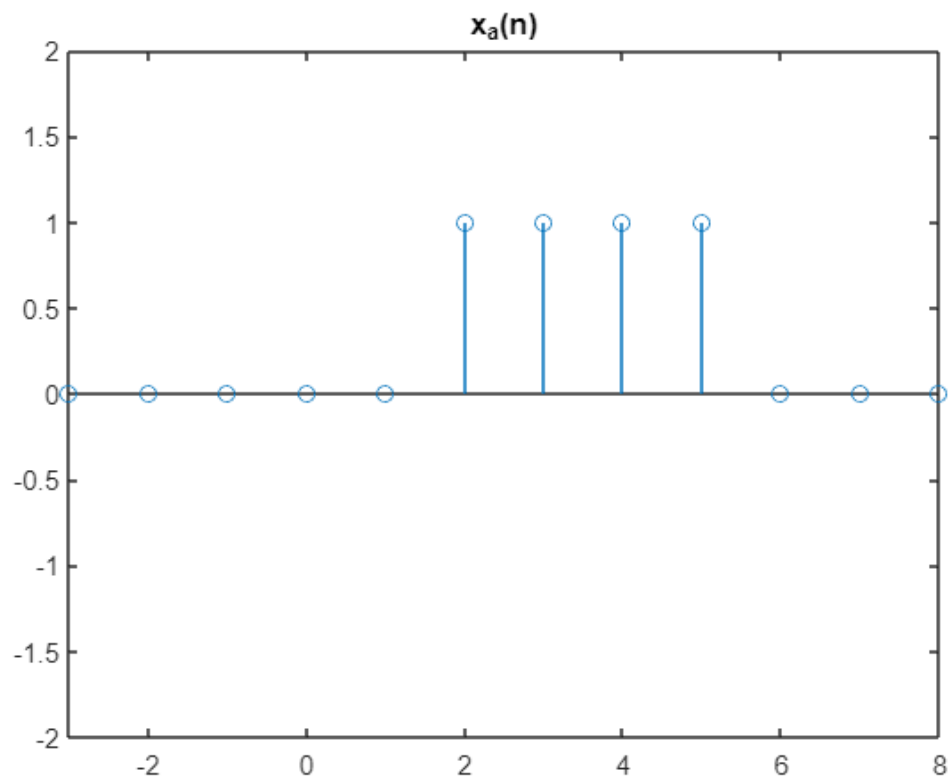
b) $n\{u[n] - u[n - 7]\}$

c) $(n - 2)\{u[n - 2] - u[n - 6]\}$

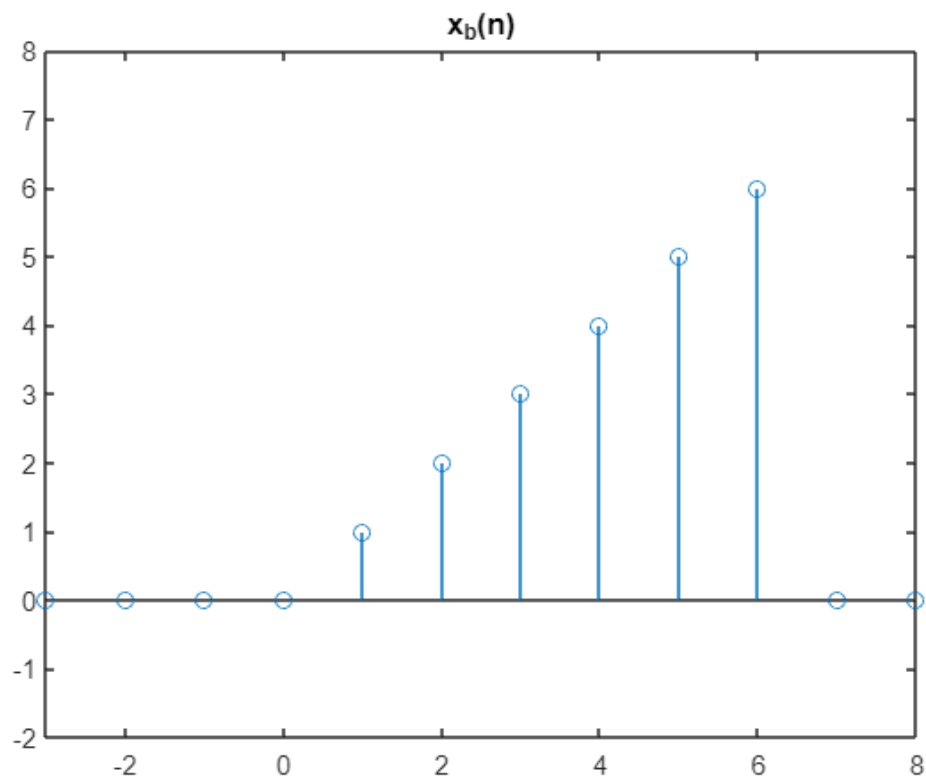
d) $(-n + 82)\{u[n - 6] - u[n - 9]\}$

e) $(n - 2)\{u[n - 2] - u[n - 6]\} + (-n + 82)\{u[n - 6] - u[n - 9]\}$

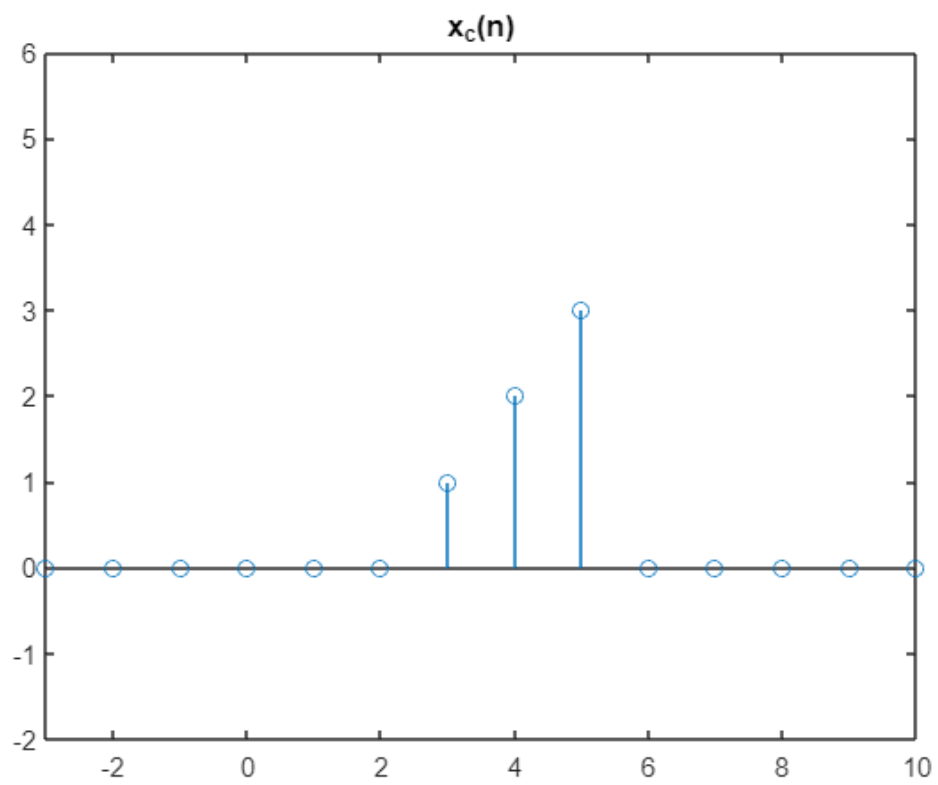
```
u=@(n) n>=0;
xa=@(n) u(n-2)-u(n-6);
xb=@(n) n.*(u(n)-u(n-7));
xc=@(n) (n-2).*(u(n-2)-u(n-6));
xd=@(n) (-n+82).*(u(n-6)-u(n-9));
xe=@(n) (n-2).*(u(n-2)-u(n-6))+(-n+82).*(u(n-6)-u(n-9));
n=-10:20;
figure(9)
stem(n, xa(n))
axis([-3 8 -2 2])
title('x_a(n)')
```

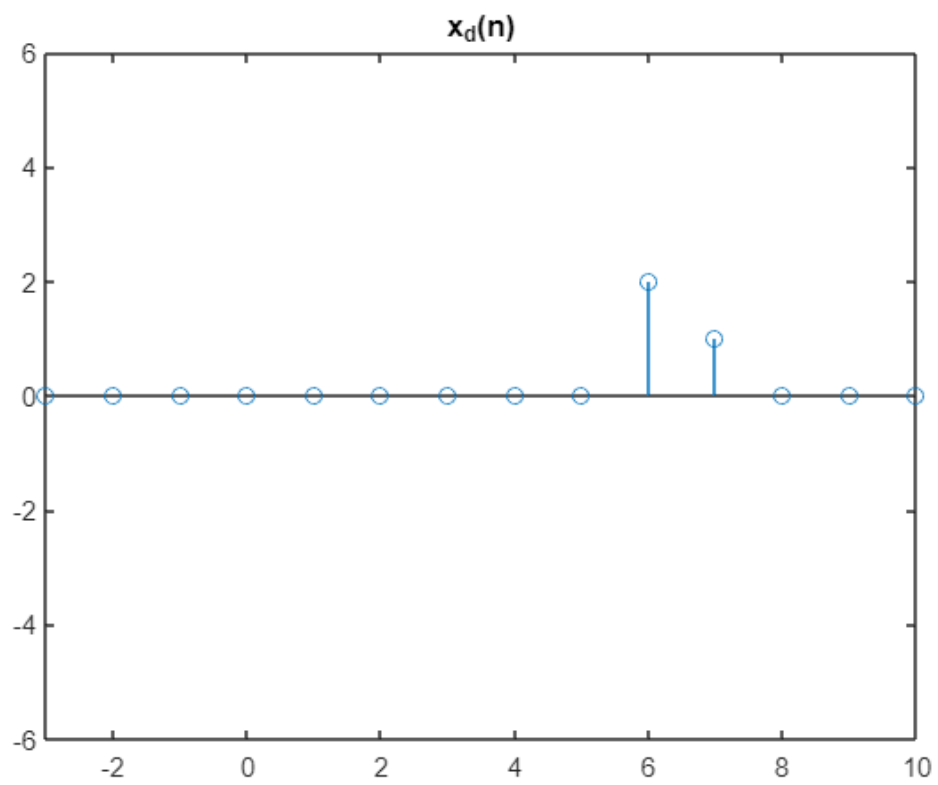
```
figure(10)
stem(n, xb(n))
axis([-3 8 -2 8])
title('x_b(n)')
```



```
figure(11)
stem(n, xc(n))
axis([-3 10 -2 6])
title('x_c(n)')
```



```
figure(12)
stem(n, xd(n))
axis([-3 10 -6 6])
title('x_d(n)')
```



```
figure(13)
stem(n, xe(n))
axis([-3 10 -6 6])
title('x_e(n)')
```

