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# Taller de Clase

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## Ejercicio 3.2

```
% Numeral (a)
syms s k T
disp('Ejercicio 3.2')
G = (1)/(s+2); % declaracion variable
pretty(G)

g=ilaplace(G); %
pretty(g)

gkT=compose(g,k*T);
pretty(gkT)

Gz=ztrans(gkT);
pretty(Gz)

Gz=subs(Gz,T,0.2);
Gz=vpa(simplify(Gz),3); % mostrar en decimales
pretty(Gz)

disp('Consola')

% Numeral (b)

disp('Ejercicio 3.2')
Gs = tf(1,[1 2]); % declaracion variable

T1=0.5;

GZ=c2d(Gs,T1,'zoh');

disp('Consola')

Ejercicio 3.2
1
-----
s + 2
```

$$\frac{\exp(-2t)}{\exp(-2T)} = \frac{z}{z - \exp(-2T)}$$
$$\frac{z}{z - 0.67}$$

Consola  
Ejercicio 3.2  
Consola

## Ejercicio 3.3

```
num=[0 10];  
den1=[1 0];  
den2=[1 4];  
  
den = conv(den1,den2)  
[Var]=c2dm(num,den,0.2,'zoh')  
  
den =  
  
1      4      0  
  
Var =  
  
0      0.1558      0.1195
```

## Ejercicio numeral a

```
NUM=[0 1];  
DEN=[1 2];  
  
NUM1=[0 10];  
DEN11=[1 0];  
DEN12=[1 4];  
DEN1=conv(DEN11,DEN12)  
  
Numerador=conv(NUM,NUM1)  
Denominador=conv(DEN,DEN1)
```

```
[Variable]=c2dm(Numerador,Denominador,0.2)

disp('consola')

DEN1 =

    1     4     0

Numerador =

    0     0    10

Denominador =

    1     6     8     0

Variable =

    0    0.0100    0.0299    0.0055

consola
```

## numeral b

```
syms s k T z

G1 = ((1)/(s+2));
G2 = ( (10)/((s)*(s+4)) );

g1 = ilaplace(G1);
g2 = ilaplace(G2);

gK1 = compose(g1,k*T);
gK2 = compose(g2,k*T);

Gz1 = ztrans(gK1);
Gz2 = ztrans(gK2);

Gz1 = subs(Gz1,T,0.2);
Gz2 = subs(Gz2,T,0.2);

Gz1 = vpa(Gz1,3);
pretty(Gz1)
Gz2 = vpa(Gz2,3);
pretty(Gz2)

Geq= Gz1*Gz2;
pretty(vpa(Geq,3))
```

```
disp('consola')
```

```

      z
-----
z - 0.67

      2.5 z      2.5 z
----- - -----
z - 1.0      z - 0.449

      /      2.5 z      2.5 z      \
z | ----- - ----- |
      \ z - 1.0      z - 0.449 /
-----
      z - 0.67

```

```
consola
```

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