Respuesta ante rampa

$$\text{V}out(s) = \frac{1}{SCR+1} * \frac{1}{S^2}$$

$$\text{V}out(s) = \frac{1}{S^2(SCR+1)}$$

Por Fracciones Parciales

$$.\frac{As+B}{S^2} + \frac{C}{SCR+1}$$

Al meter los valores en Octave obtenemos:

A= -0.01

B=1

C=0.01

$$.\frac{-0.01S+1}{s^2} + \frac{0.01}{SCR+1}$$

$$.\frac{-0.01S}{S^2} + \frac{1}{S^2} + \frac{0.01}{SCR+1}$$

$$.\frac{-0.01}{S} + \frac{1}{S^2} + \frac{0.01}{SCR+1}$$

Al aplicar transformada de Laplace:

-1= L{ $\frac{-0.01}{S}$ } = -u(t)

t= L{$\frac{1}{S^2}$}

$.e^{\frac{1}{RC}*t}$= L{$\frac{0.01}{SCR+1}$}

$$Vout(t) = -1 + t + e^{\frac{1}{RC}*t}$$

Transformada de Laplace

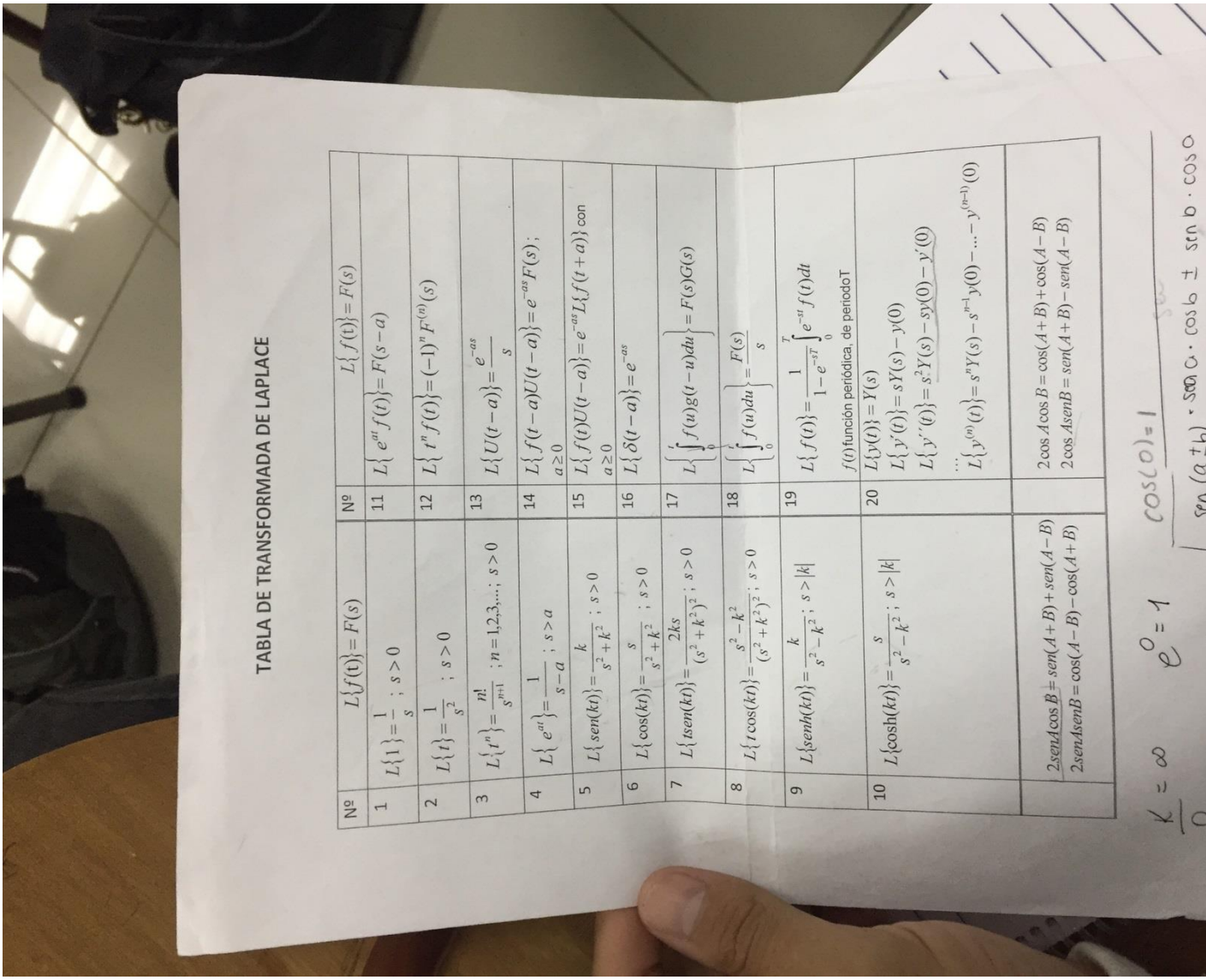


TABLA DE TRANSFORMADA DE LAPLACE

Nº	$L\{f(t)\}=F(s)$	Nº	$L\{f(t)\}=F(s)$
1	$L\{1\}=\frac{1}{s}\ ;\ s>0$	11	$L\{e^{at}f(t)\}=F(s-a)$
2	$L\{t\}=\frac{1}{s^2}\ ;\ s>0$	12	$L\{t^n f(t)\}=(-1)^n F^{(n)}(s)$
3	$L\{t^n\}=\frac{n!}{s^{n+1}}\ ;\ n=1,2,3,\ldots;\ s>0$	13	$L\{U(t-a)\}=\frac{e^{-as}}{s}$
4	$L\{e^{at}\}=\frac{1}{s-a}\ ;\ s>a$	14	$L\{f(t-a)U(t-a)\}=e^{-as}F(s)\ ;\ a\geq 0$
5	$L\{sen(kt)\}=\frac{k}{s^2+k^2}\ ;\ s>0$	15	$L\{f(t)U(t-a)\}=e^{-as}L\{f(t+a)\}$ con $a\geq 0$
6	$L\{\cos(kt)\}=\frac{s}{s^2+k^2}\ ;\ s>0$	16	$L\{\delta(t-a)\}=e^{-as}$
7	$L\{tsen(kt)\}=\frac{2ks}{(s^2+k^2)^2}\ ;\ s>0$	17	$L\left\{\int_0^t f(u)g(t-u)du\right\}=F(s)G(s)$
8	$L\{t\cos(kt)\}=\frac{s^2-k^2}{(s^2+k^2)^2}\ ;\ s>0$	18	$L\left\{\int_0^t f(u)du\right\}=\frac{F(s)}{s}$
9	$L\{senh(kt)\}=\frac{k}{s^2-k^2}\ ;\ s>\lvert k\rvert$	19	$L\{f(t)\}=\frac{1}{1-e^{-sT}}\int_0^T e^{-st}f(t)dt$ $f(t)$ función periódica, de periodoT
10	$L\{\cosh(kt)\}=\frac{s}{s^2-k^2}\ ;\ s>\lvert k\rvert$	20	$L\{y(t)\}=Y(s)$ $L\{y'(t)\}=sY(s)-y(0)$ $L\{y''(t)\}=s^2Y(s)-sy(0)-y'(0)$ $\ldots$ $L\{y^{(n)}(t)\}=s^nY(s)-s^{n-1}y(0)-\ldots-y^{(n-1)}(0)$
	$2sen A\cos B=sen(A+B)+sen(A-B)$ $2sen A sen B=\cos(A-B)-\cos(A+B)$		$2\cos A\cos B=\cos(A+B)+\cos(A-B)$ $2\cos A sen B=sen(A+B)-sen(A-B)$

Programacion Octave

Octave Online · Cloud ID

Seguro | https://octave-online.net

Octave Online

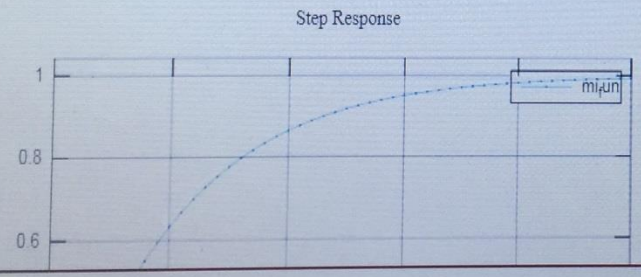
Vars

```
octave:1> Modelos Electricos
error: 'Modelos' undefined near line 1 column 1
octave:1> num=1
num =  1
octave:2> num=[1];
octave:3> den=[0.01 , 1];
octave:4> tf(num , den)

Transfer function 'ans' from input 'u1' to output ...

          1
 y1:  ----------
      0.01 s + 1

Continuous-time model.
octave:5> mi_fun = tf(num , den);
octave:6> step(mi_fun);
```



ES (3:49)

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Vars

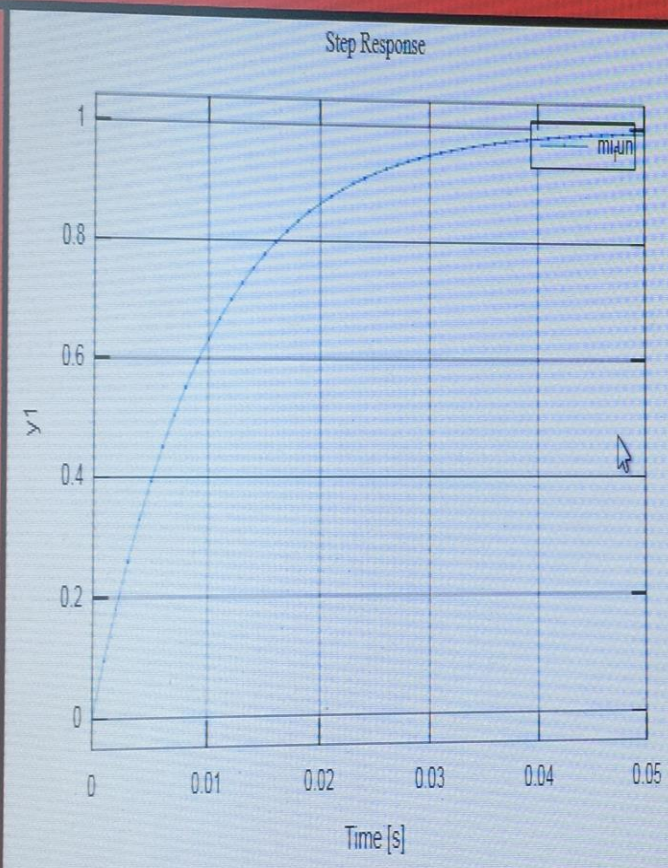
ans

x2] den

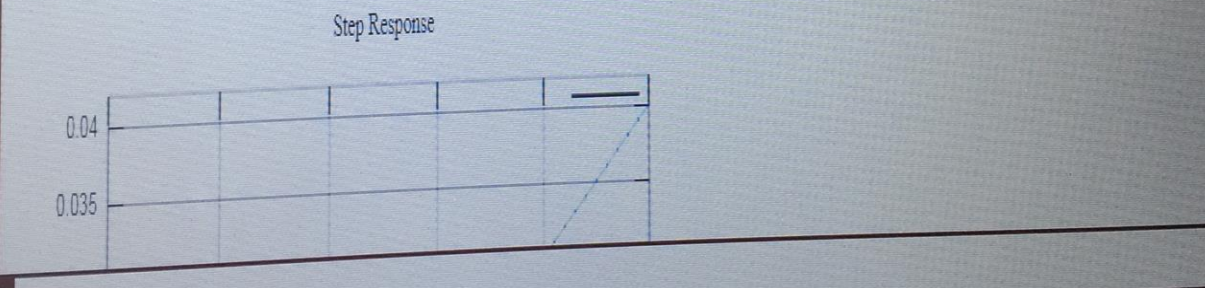
mi_fun

num

s




```
octave:7> s= tf('s');
octave:8> step(mi_fun/s);
```



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Octave Online

Vars

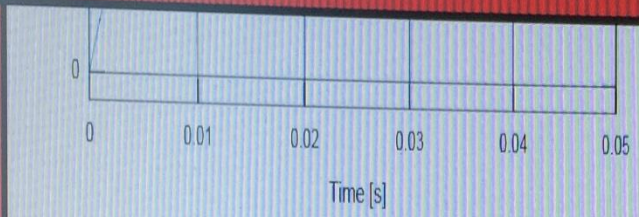
ans

[1x2] den

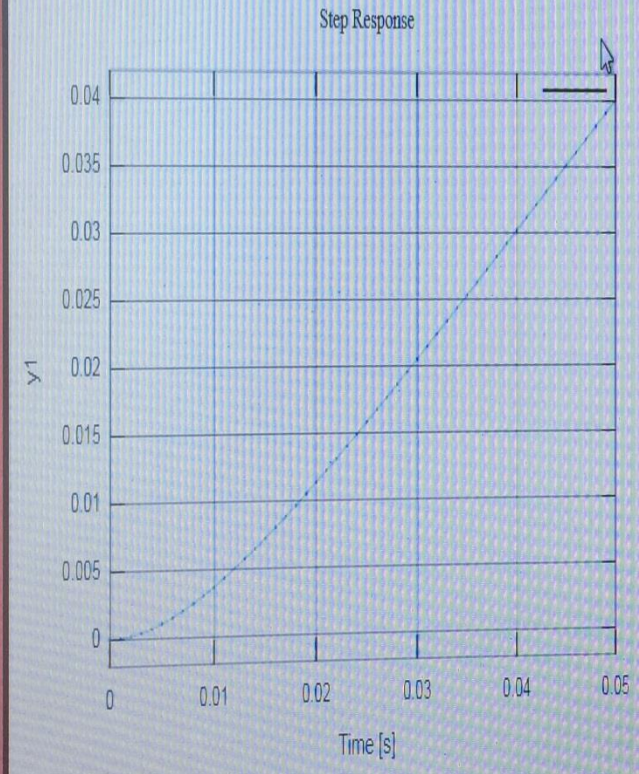
mi_fun

num

s




```
octave:7> s= tf('s');
octave:8> step(mi_fun/s);
```



ES (4:07)