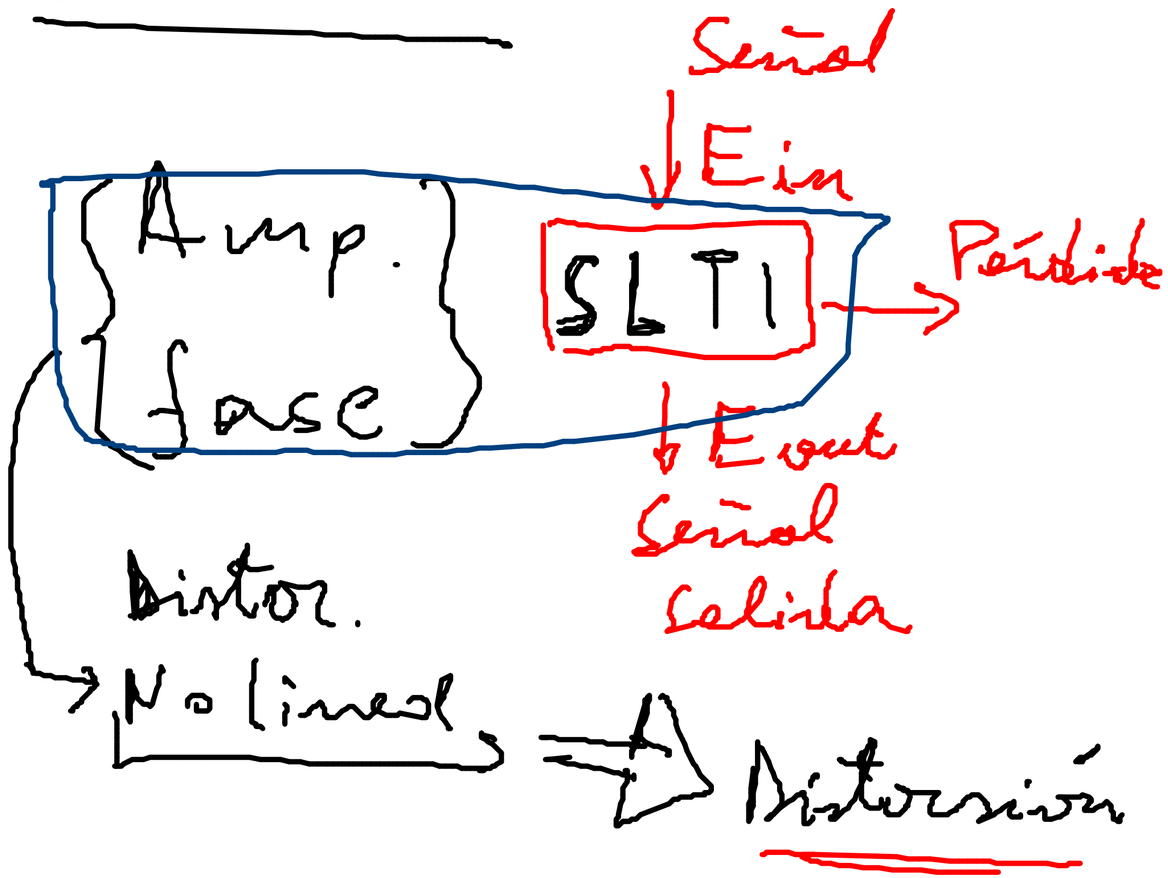
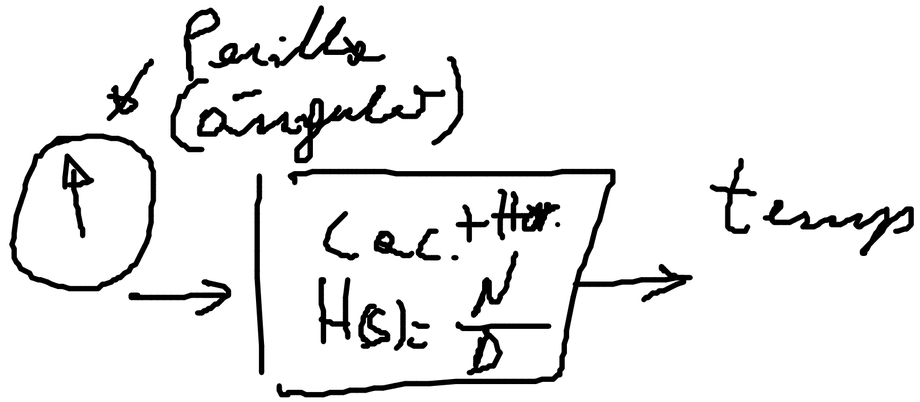
Distorsión

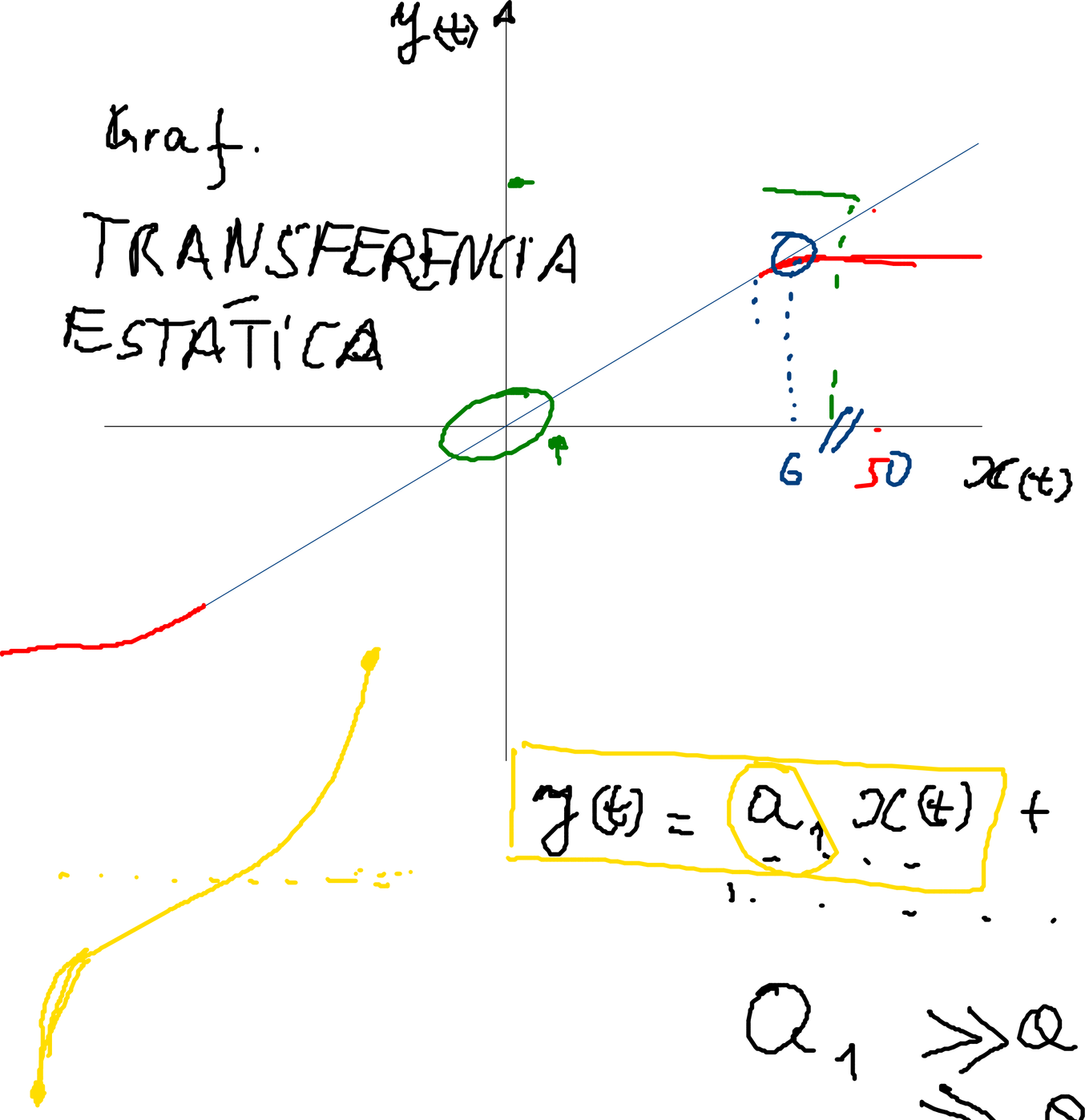

Señal
Ein
Amp.
fase
SLTI
Pérdida
Eout
Señal
salida
Distor.
No lineal
Distorsión

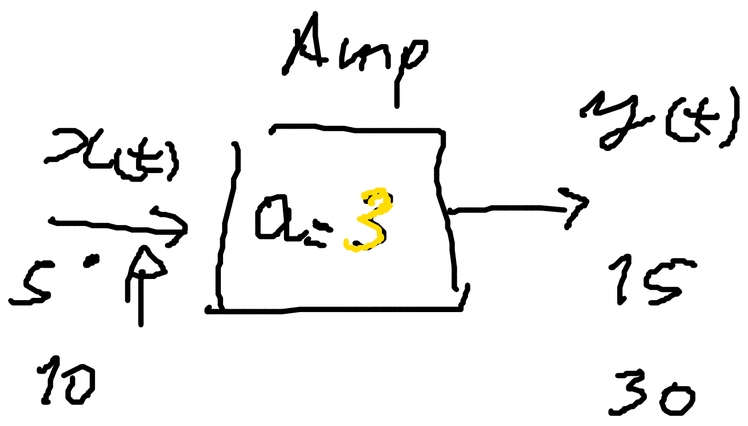

Perilla
(ángulo)
Calc. + Hor.
H(s) = N/D
temp

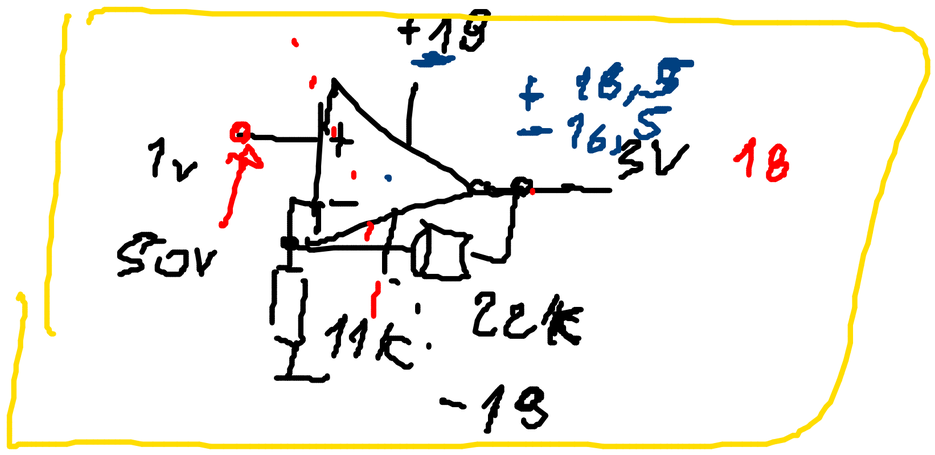

[o]
o
[t]

Graf.

TRANSFERENCIA ESTÁTICA

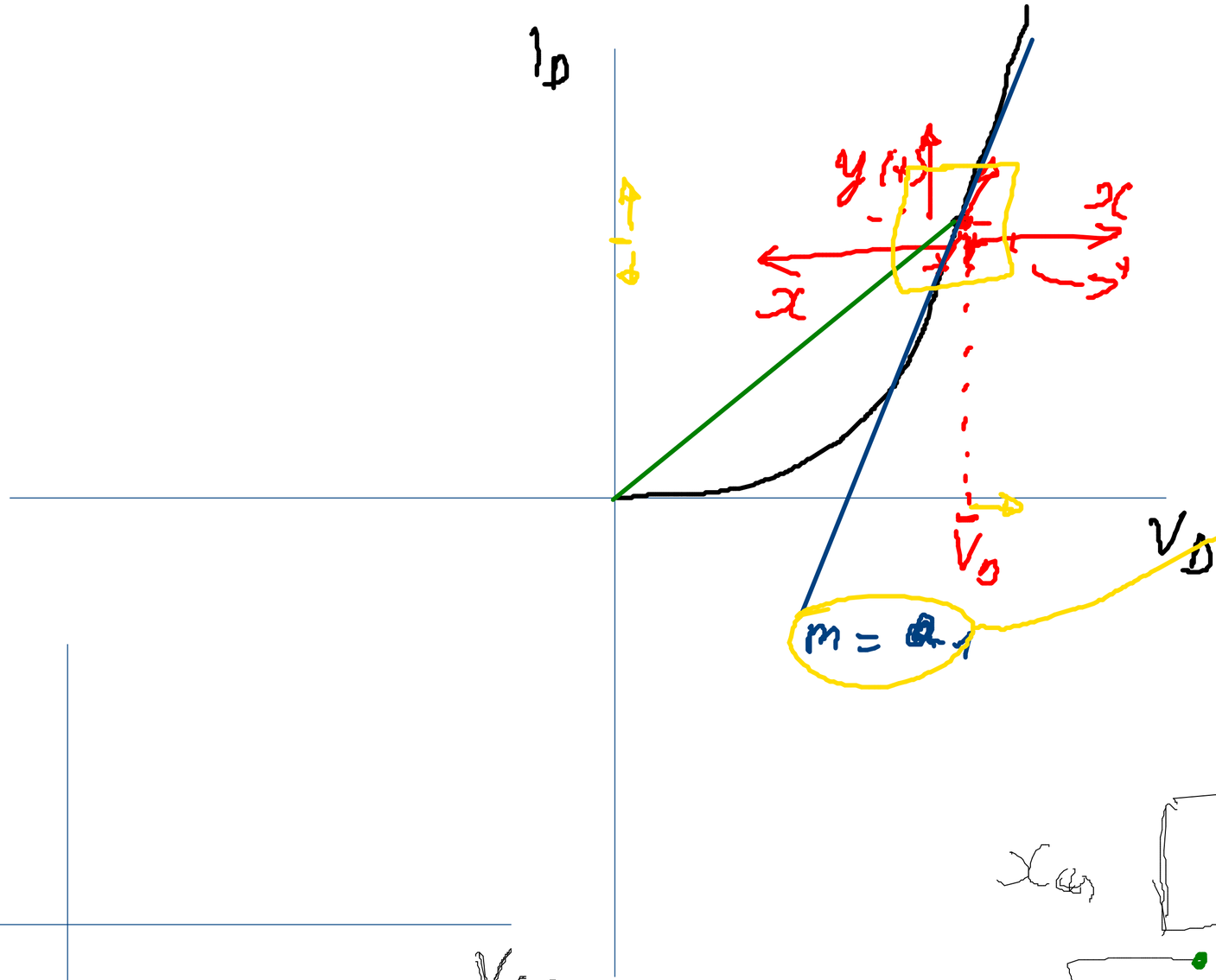






$$y(t) = a_1 x(t) + a_2 x^2(t) + a_3 x^3(t) + \dots$$

$$a_1 \gg a_2 \gg a_3$$

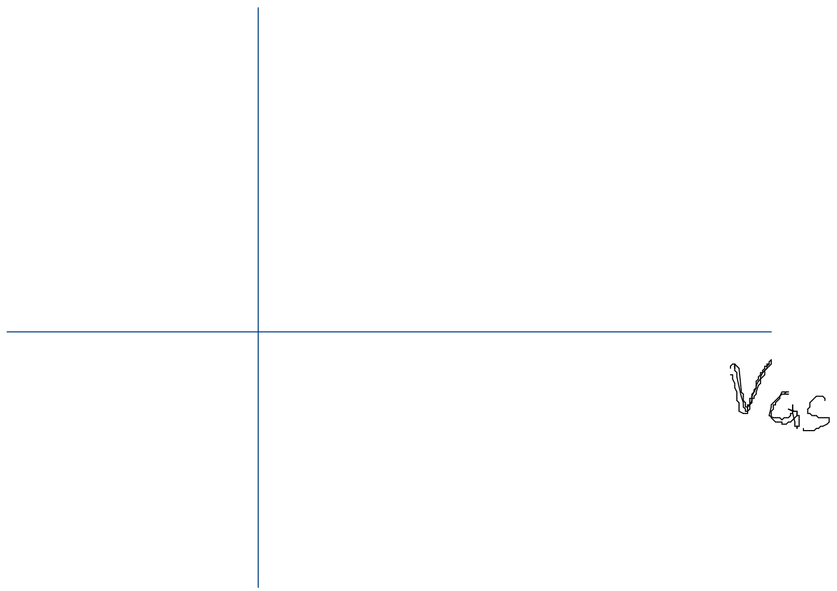


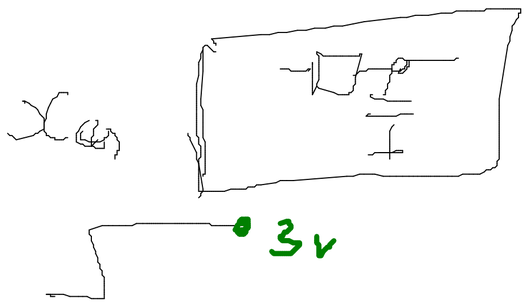
$$I_D = I_S\left(e^{\pm\frac{V_D}{\eta}} - 1\right)$$

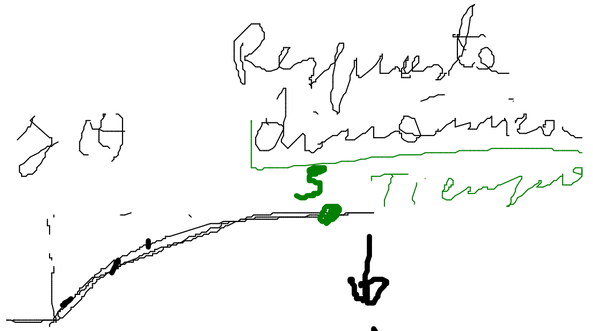
Taylor

$$y = Q_1 x(t) + Q_2 x(t) + Q_3 x(t) \ldots$$

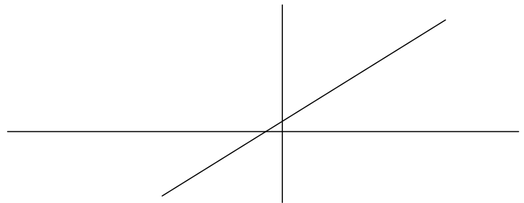
$$Q_{n \to \infty}$$



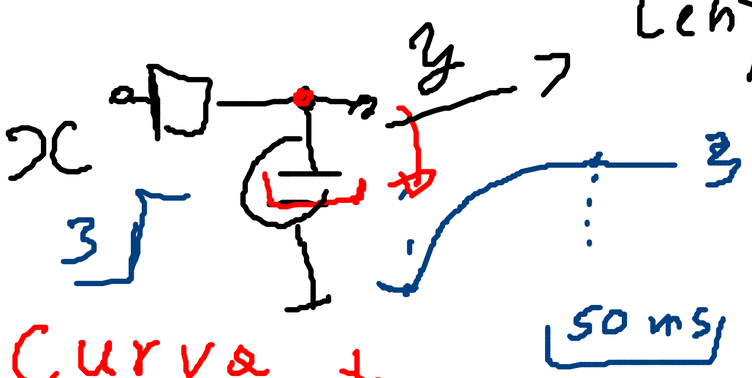




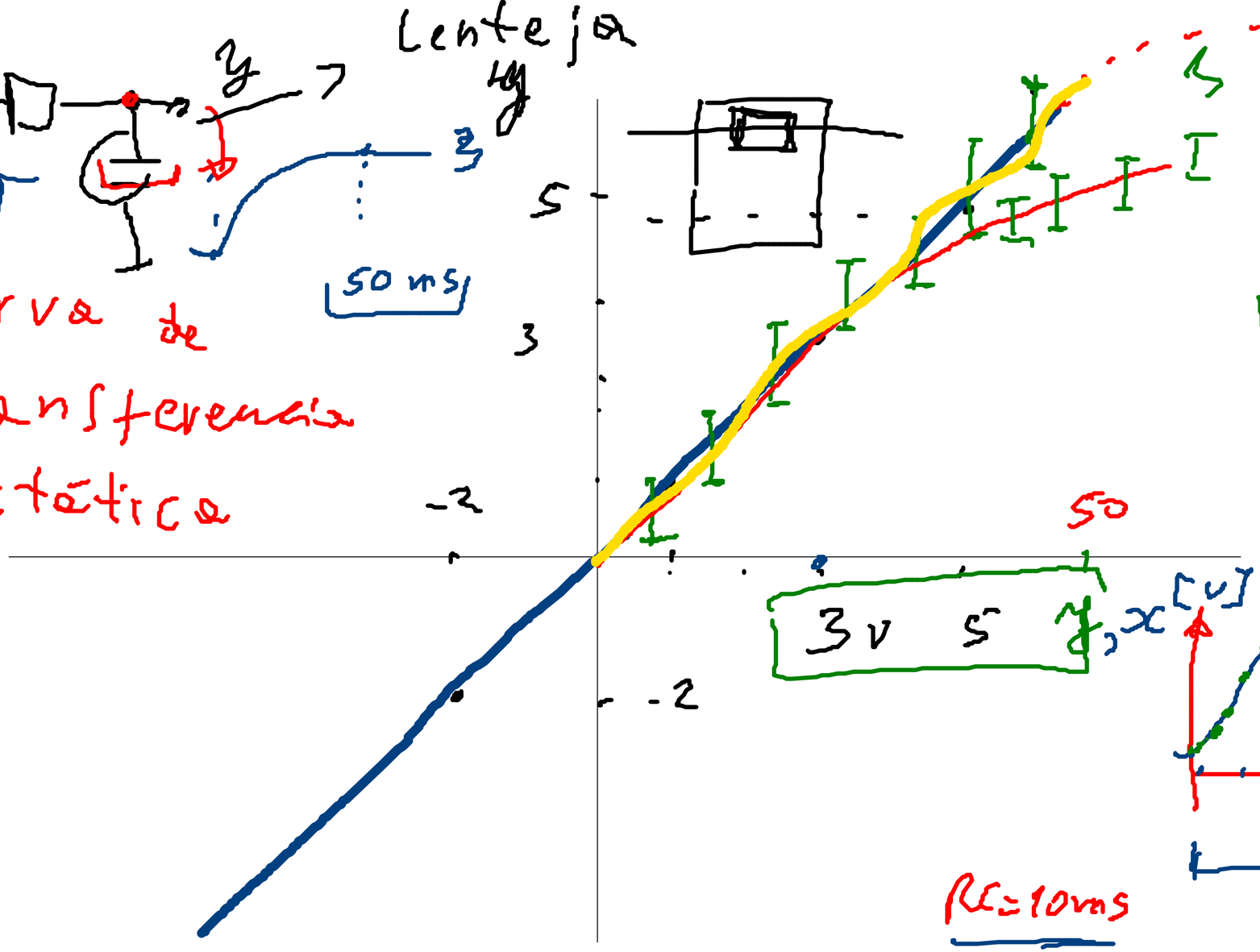
EDs



Lenteja



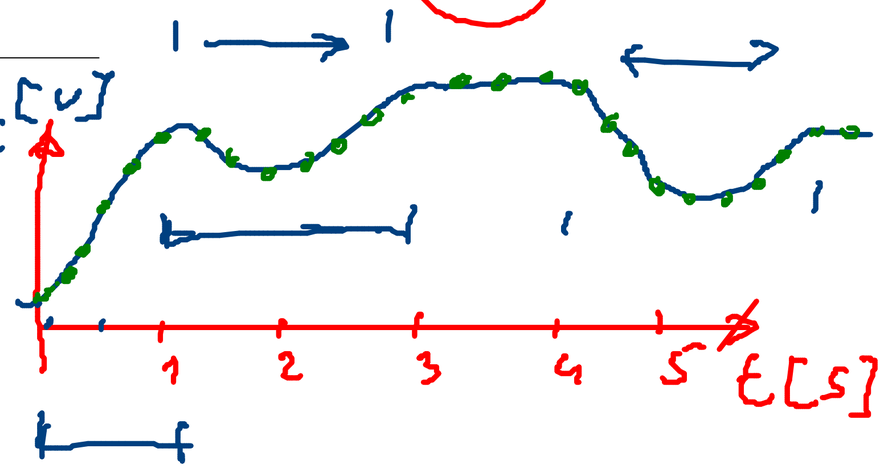
Curva de Transferencia Estática



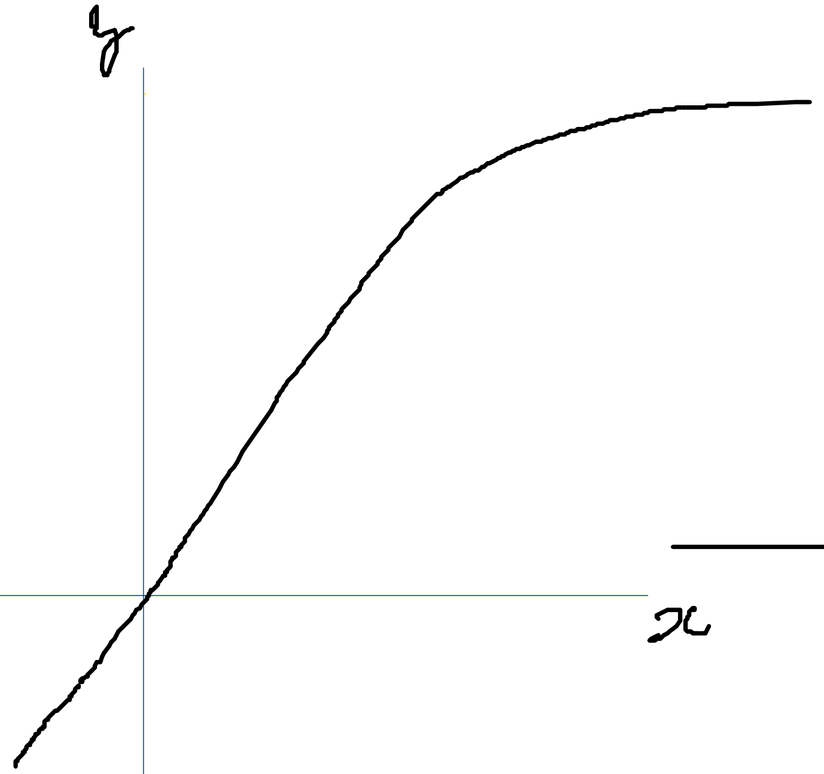
$$y(t) = Q_1 \cdot x(t)$$

$$Q_2 \; x^2(t)$$

$$Q_3 \; x^3(t) \cdots$$



RC = 10ms

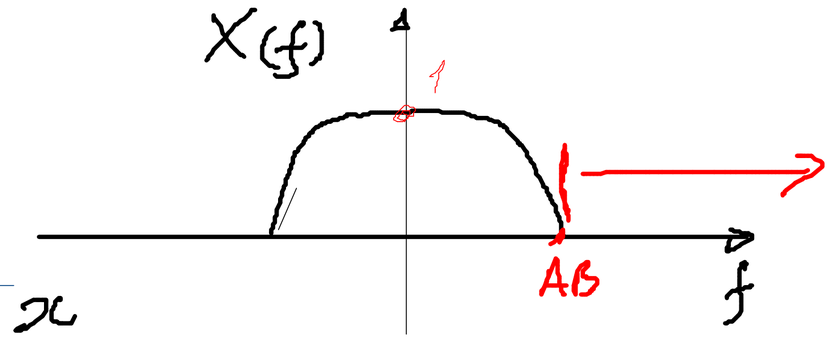


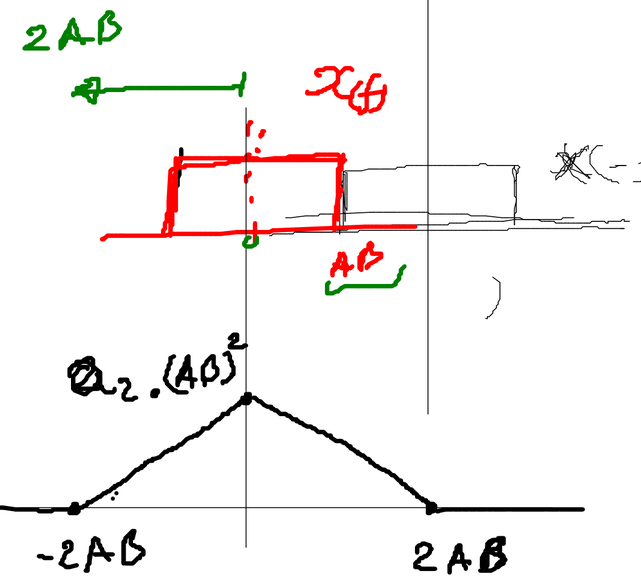
$$F\{y(t)\} = \{ Q_1 x(t) + Q_2 x^2(t) + Q_3 x^3(t) \}$$

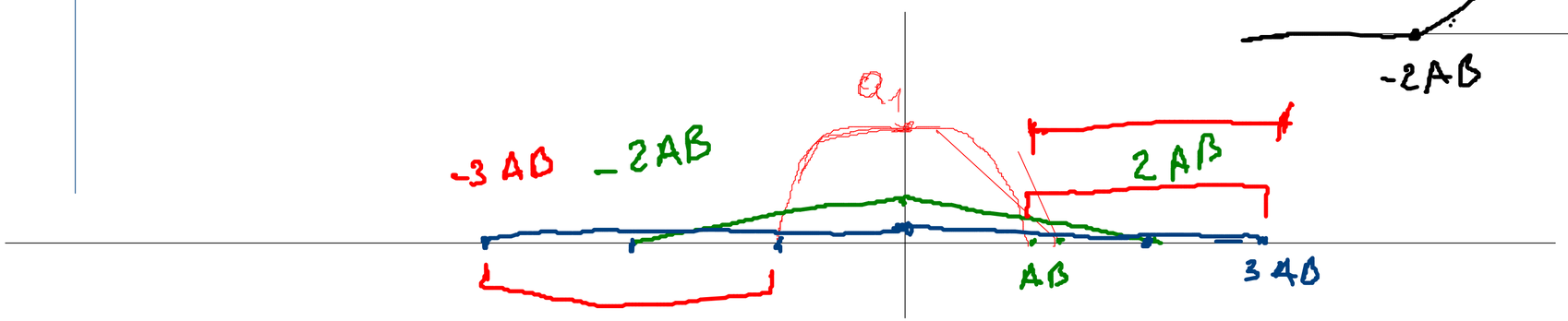
$$Q_1 x(t) \leftrightarrow Q_1 X(f)$$

$$Q_2 \cdot x(t) \cdot x(t) \rightarrow Q_2 X(f) * X(f)$$

$$+ Q_3 X(f) * X(f) * X(f)$$







AM

10KHz

$X(f)$

$y(t) = a_1 x(t) \dots a_2 x_t^2$

$a_3 x_t^3$

FM

88 MHz

108

$|X(f)|$

a_1

$f_c = 590kHz$

12

$a_2 \cdot X(f) * X(f)$

$a_3 X(f) * X(f) * X(f)$

3AB

AB

2AB

3AB

$-3f_c$

$-2f_c$

$-f_c$

$-AB$

$+AB$

$f=0$

590KHz

2AB

$+2f_c$

$3f_c$

1170

1180

Frecuencia	Amplitud
0	$a_2 A^2$
f_1 , f_2	$\left(a_1 A + \frac{9}{4} a_3 A^3\right)$
$2f_1$, $2f_2$	$\frac{a_2 A^2}{2}$
$(f_1 \pm f_2)$	$a_2 A^2$
$3f_1$, $3f_2$	$\frac{a_3 A^3}{4}$
$(2f_1 \mp f_2)$	$\frac{3}{4} a_3 A^3$
$(2f_2 \mp f_1)$	$\frac{3}{4} a_3 A^3$

$$y(t) = a_1 x(t) + a_2 x^2(t) + a_3 x^3(t)$$