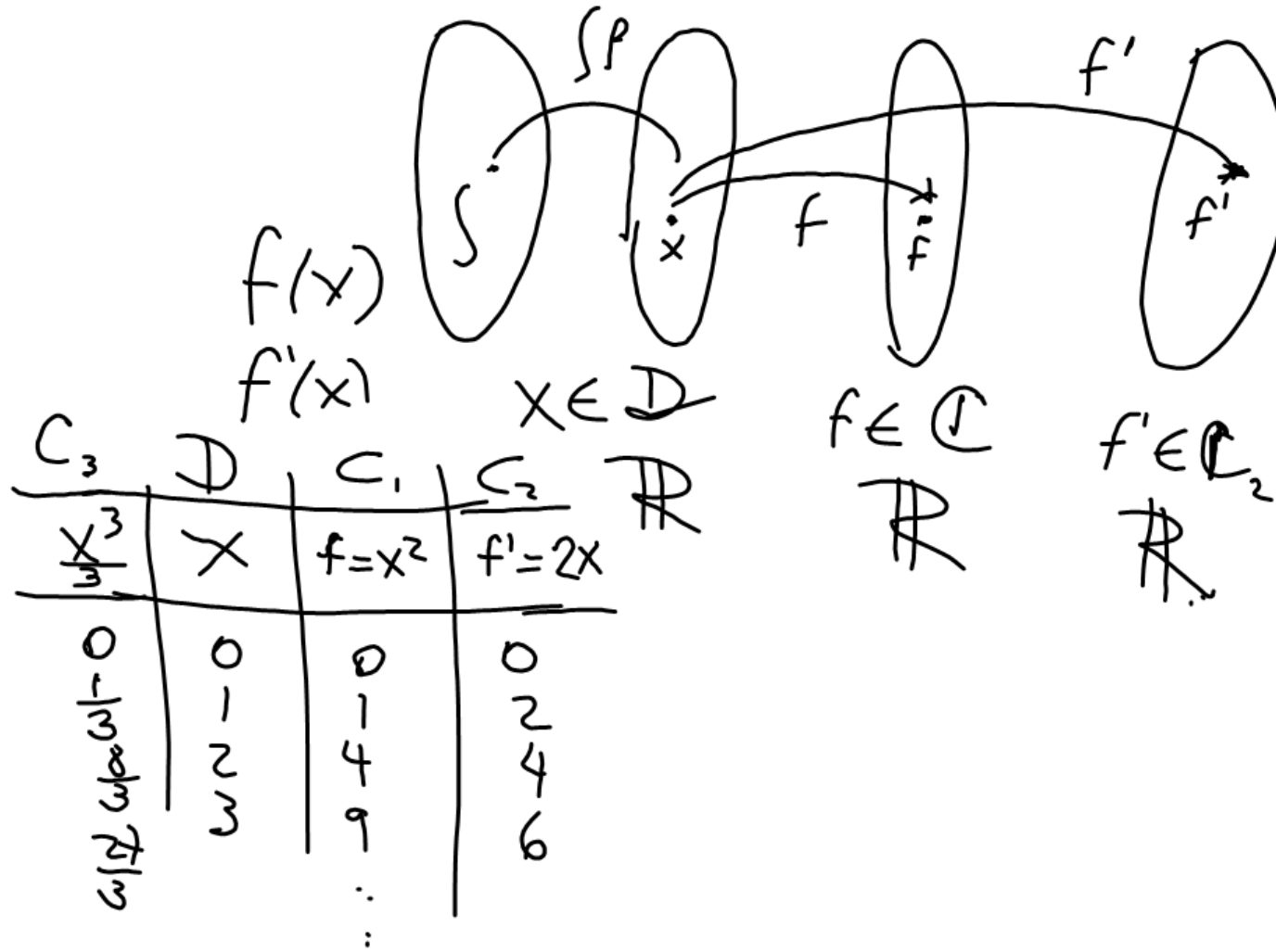
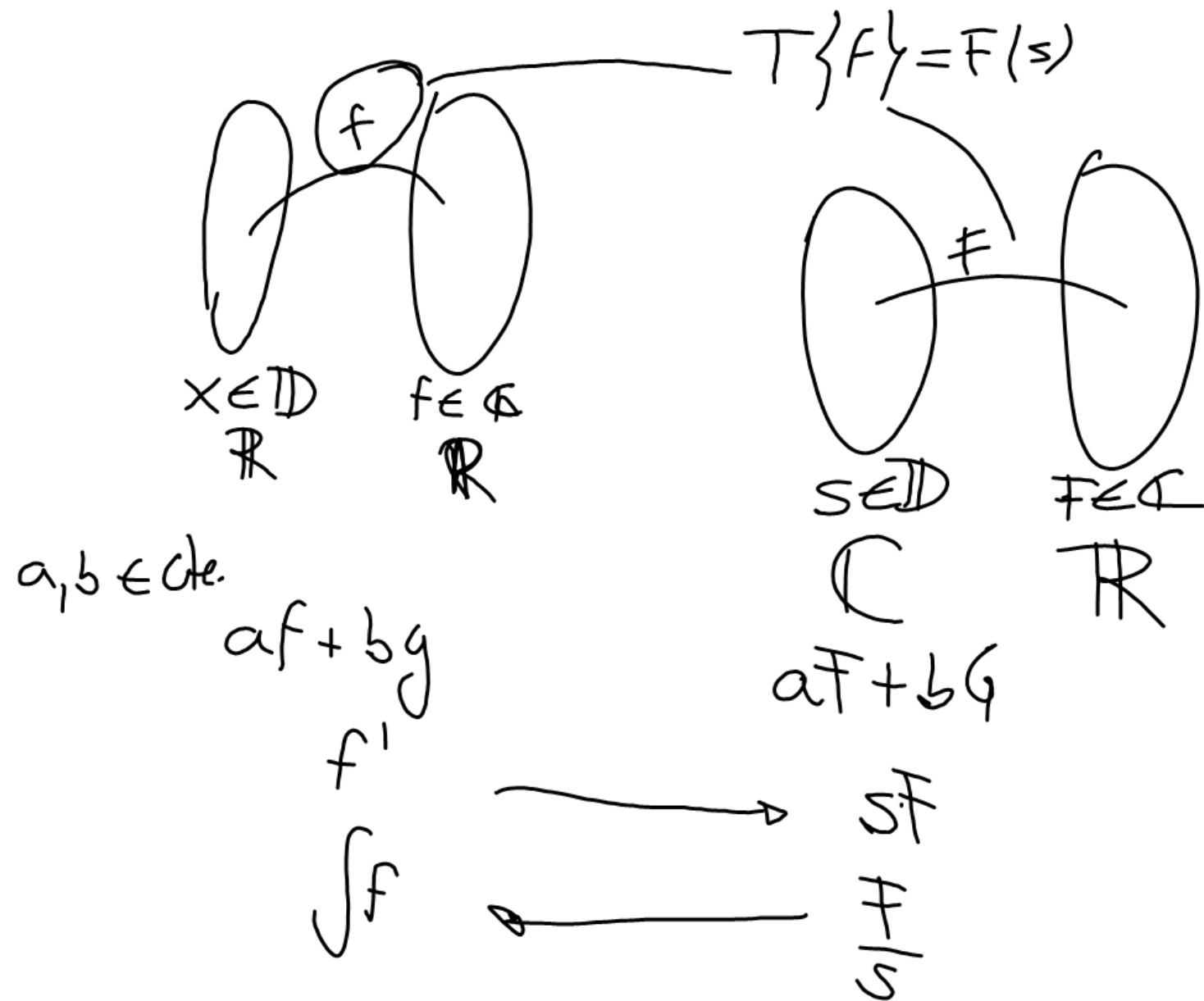
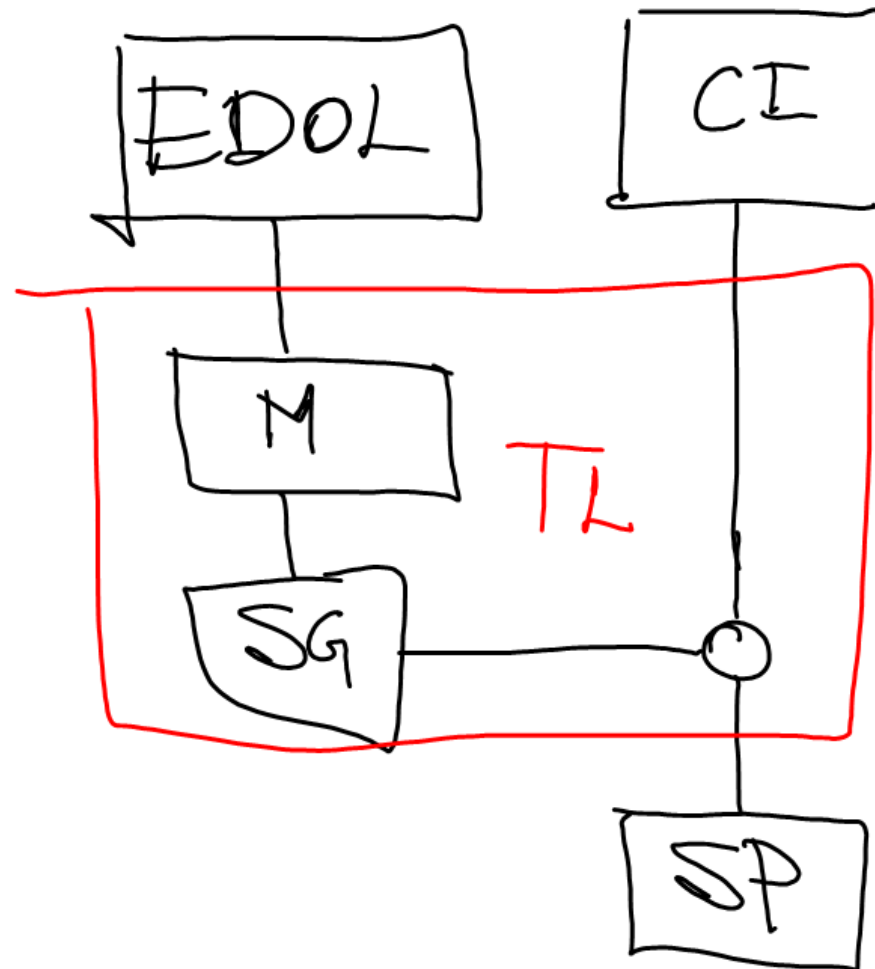


TEMA 3.-

- a) Método de TRANSFORMADA DE LAPLACE
- b) SISTEMAS DE EDOs y MATRIZ EXPONENCIAL.







$$T\{f(x)\} = \int_{-\infty}^{\infty} N(x,s) f(x) dx = F(s)$$

↖ operador
↖ argumento

núcleo

$$N(x,s) = \begin{cases} 0 & ; x < 0 \\ e^{-sx} & ; x \geq 0 \end{cases}$$

Laplace.

$$\begin{aligned}
 \mathcal{L}\{1\} &= \int_0^{\infty} e^{-st} \cdot (1) \cdot dt \\
 &= \left[\int e^{-st} dt \right]_0^{\infty} \\
 &= \left[-\frac{1}{s} e^{-st} \right]_0^{\infty} \\
 &= \left[-\frac{1}{s} (e^{-st}) \right]_0^{\infty} \\
 &= -\frac{1}{s} \left(\lim_{t \rightarrow \infty} e^{-st} - 1 \right) \\
 \mathcal{L}\{1\} &= \frac{1}{s}
 \end{aligned}$$

A red horizontal line is drawn above the final result $\frac{1}{s}$.