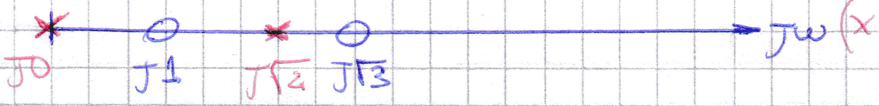
1) B) Cauer (1). (Remoción de polos en ∞)

$$Z(s) = \frac{(s^2+3)(s^2+1)}{s.(s^2+2)}$$



Removiendo el polo de (ω → ∞):

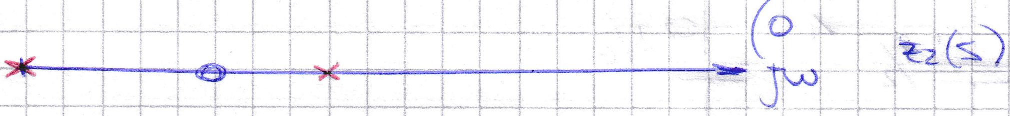
$$Z_2(s) = \frac{(s^2+3)(s^2+1)}{s.(s^2+2)} - K_\infty . s = \frac{s^4+4s^2+3 - K_\infty . s^2.(s^2+2)}{s(s^2+2)}$$

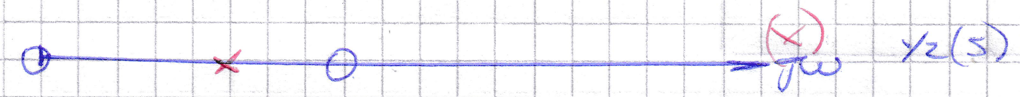
$$Z_2(s) = \frac{s^4+4s^2+3-K_\infty s^4 - 2K_\infty s^2}{s.(s^2+2)}$$

$$K_\infty = \lim_{s\to\infty} \frac{Z(s)}{s} = \lim_{s\to\infty} \frac{(s^2+3)(s^2+1)}{s^2.(s^2+2)} = 1$$

$$K_\infty . s = 1.s \Big]_{Z(s)} \Rightarrow \boxed{L = 1} \text{ (en serie)}$$

$$Z_2(s) = \frac{2s^2+3}{s(s^2+2)}$$





$$Y_2(s) = \frac{s.(s^2+2)}{2s^2+3} - K_{2\infty} . s = \frac{s^3+2s - K_{2\infty} . s\left(2.\left(s^2+3/2\right)\right)}{2.\left(s^2+3/2\right)}$$

$$K_{2\infty} = \lim_{s\to\infty} \frac{Y_2(s)}{s} = \lim_{s\to\infty} \frac{s^2+2}{2.\left(s^2+\frac{3}{2}\right)} = \frac{1}{2}$$

$K_{2\infty}.s = \frac{1}{2}.s \Big\rfloor_{Y(s)}$ es un capacitor en derivación de valor $\frac{1}{2}$.

$$Y_4(s) = \frac{\frac{1}{2}s}{2.\left(s^2+\frac{3}{2}\right)}$$

$$Z_4(s) = \frac{4.\left(s^2+\frac{3}{2}\right)}{s}$$

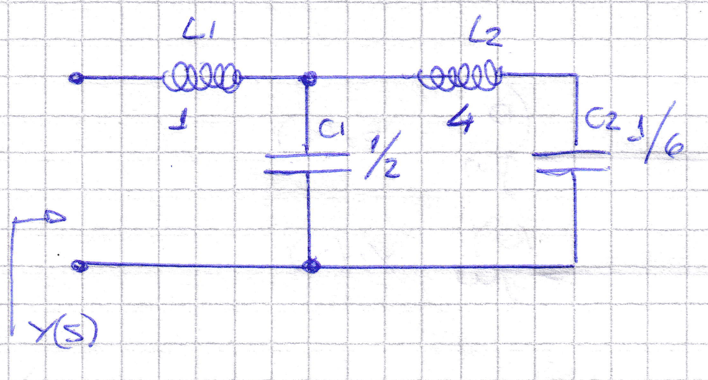
$$Z_6(s) = Z_4(s) - K_{3\infty}.s = \frac{4s^2+6-K_{3\infty}.s}{s}$$

$$K_{3\infty} = \lim_{s\to\infty} \frac{Z_4(s)}{s} = \lim_{s\to\infty} \frac{4\left(s^2+\frac{3}{2}\right)}{s^2} = 4.$$

$K_{3\infty}.s = 4.s \Big\rfloor_{Z(s)}$ es un inductor de valor 4 en serie.

$$Z_6(s) = \frac{4s^2+6-4s^2}{s} = \frac{6}{s} = \frac{1}{\frac{1}{6}.s} \Big\rfloor_{Y(s)}$$

$\frac{1}{6}.s$ es un capacitor de valor $1/6$ en ~~serie~~ derivación.



NOTA