

Soal MID :

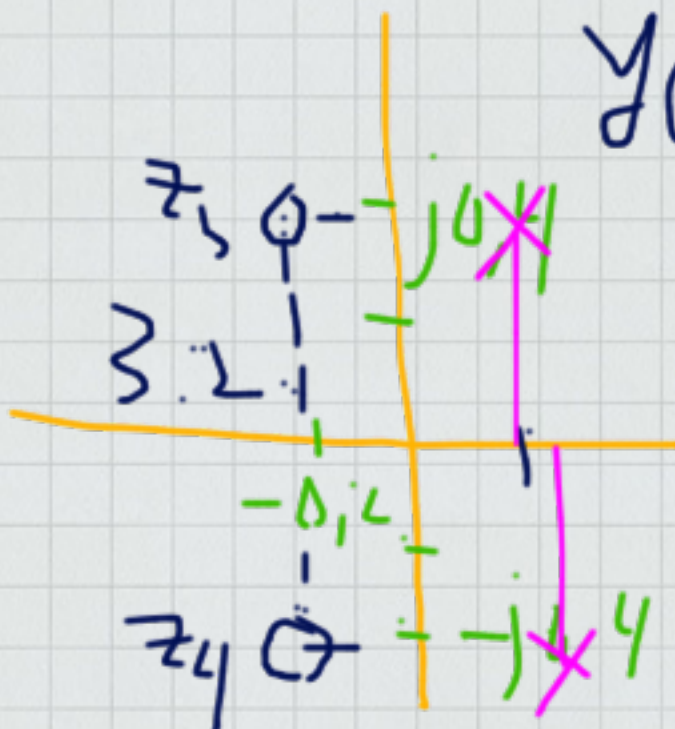
2.2. $\frac{d^2 y(t)}{dt^2} + 6 \frac{dy(t)}{dt} + 9 y(t) = x(t)$

2.3. $G(s) = \frac{Y(s)}{X(s)} = \frac{1}{s^2 + 6s + 9} = \frac{1}{(s+3)^2}$

2.4. $x(t) = \delta(t) \rightarrow X(s) = 1$

$$Y(s) = G(s)X(s) = \frac{1}{(s+3)^2}$$

$$y(t) = \mathcal{L}^{-1} Y(s) = \mathcal{L}^{-1} \frac{1}{(s+3)^2} = te^{-3t}$$



$$z_{3,4} = \frac{-2 \pm \sqrt{4 - 20}}{10} = -0,2 \pm j0,4$$

$$p_{4,5} = \frac{2 \pm \sqrt{4 - 20}}{10} = 0,2 \pm j0,4$$