

3.1. b) . Nisbah Akih daur terbuka

$$\textcircled{02} \quad G(s) H(s) = \left(\frac{1}{5s^2} \right) \left(\frac{2s+1}{4s+3} \right) = \frac{2s+1}{5s^2(4s+3)}$$

c) Nisbah Alih daur tertutup

$$G_T(s) = \frac{G(s) H(s)}{1 + G(s) H(s)} = \frac{\left(\frac{1}{5s^2} \right) \left(\frac{2s+1}{4s+3} \right)}{1 + \left(\frac{1}{5s^2} \right) \left(\frac{2s+1}{4s+3} \right)} =$$

$\textcircled{02}$

$$= \frac{2s+1}{20s^3 + 15s^2}$$
$$20s^3 + \cancel{bs^2 + sta}$$

d) Persamaan karakteristik

$$1 + G(s) H(s) = 0$$

$$\textcircled{02} \quad 1 + \left(\frac{1}{5s^2} \right) \left(\frac{2s+1}{4s+3} \right) = 0$$
$$20s^3 + \cancel{bs^2 + sta} = 0$$

3.2

