

$$\frac{8Y(s)}{8Y_d(s)} = \frac{2}{s^2 + \frac{6}{5}s + 2}$$

$$\omega_n = \sqrt{2} \quad \zeta = \frac{\frac{6}{5}}{2\omega_n} = \frac{6}{10\sqrt{2}} = 0.42$$

$$t_s = \frac{4.6}{\zeta\omega_n} = \frac{4.6}{\frac{3}{5}} = \underline{\underline{7.67 \text{ s}}}$$