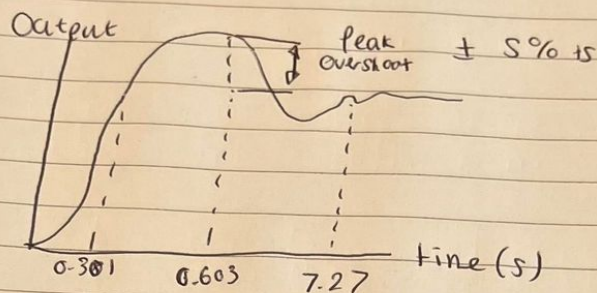


4)c)



d)

$$\text{So } 12.5 = \left\{ e^{\left(\frac{-\pi \zeta}{\sqrt{1-\zeta^2}} \right)} \right\} \times 100$$

$$\ln 0.125 = \frac{-\zeta \pi}{\sqrt{1-\zeta^2}}$$

$$-2.08 \left(\sqrt{1-\zeta^2} \right) = -\zeta \pi$$

$$4.3264 (1-\zeta^2) = 9.87 \zeta^2$$

$$4.3264 = 9.700 \zeta^2$$

$$\zeta = \cancel{5.18} 0.537$$

Required value for 12.5% Peak Overshoot.