

desired denon:  $s^2 + 2(1)(0.46) s + 1^2$   
 $= \underline{s^2 + .92s + 1}$

Closed Loop TF:

$$\frac{T_d(s)}{T_d(s)} = \frac{\cancel{(K_p s + K_I)} \frac{25}{s} \frac{25}{2500s + 1}}{1 + \cancel{(K_p s + K_I)} \frac{25}{s} \frac{25}{2500s + 1}}$$

$$= \frac{25(K_p s + K_I)}{2500s^2 + (1 + 25K_p)s + 25K_I}$$

$$= \frac{\frac{1}{100}(K_p s + K_I)}{s^2 + \frac{1+25K_I}{2500}s + \frac{K_I}{100}}$$

$$\begin{matrix} \uparrow & \uparrow \\ \text{want } .92 & \text{want } 1 \end{matrix}$$

choose  $K_I = 100$   
 $K_p = 92$