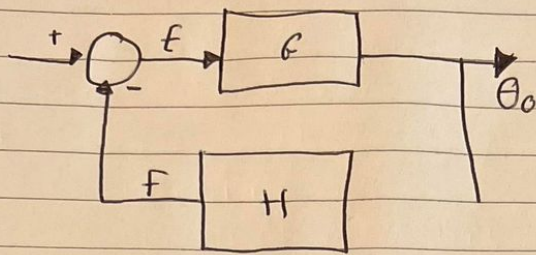


2.c)



$$G = \frac{\Theta_0}{E} = E = \frac{\Theta_0}{G}$$

$$H = \frac{F}{\Theta_0} = F = H \cdot \Theta_0$$

$$E = \Theta_i - F$$

$$\therefore \frac{\Theta_0}{G} = \Theta_i - H \cdot \Theta_0 = \frac{\Theta_0}{G} + H \cdot \Theta_0 = \Theta_i$$

$$\text{so, } \Theta_0 \left(\frac{1 + G \cdot H}{G} \right) = \Theta_i = \frac{\Theta_0}{\Theta_i} = \frac{G}{1 + G \cdot H}$$

$$d) \frac{\Theta_0}{\Theta_i} = \frac{G_1 G_2}{1 + G_1 G_2 H} = \frac{(10 \times 2.5)}{1 + (10 \times 2.5 \times 0.15)}$$

$$= \frac{\Theta_0}{\Theta_i} = 5.3 \frac{\text{mm}}{\text{V}}$$

e) Two examples of closed loop systems are Temperature Control System