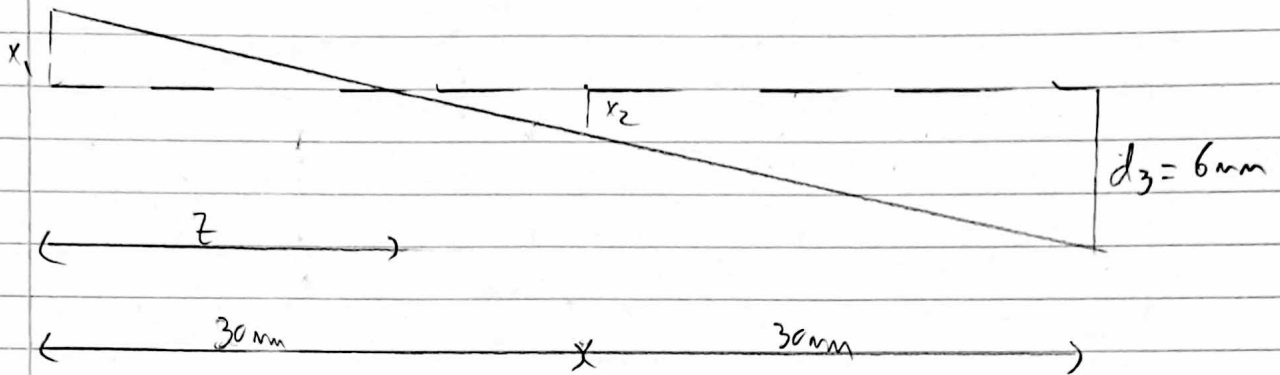


Solutions: 21-5-5.4-Mk-06



$$F = 3 \text{ N}$$

$$\textcircled{1} \quad \frac{60-z}{6} = \frac{z}{x_1} = \frac{30-z}{x_2}$$

$$F = kx \rightarrow x = \frac{F}{k}$$

$$\textcircled{2} \quad x_1 = \frac{F}{k_1} \quad x_2 = \frac{2F}{k_2}$$

$$\textcircled{2} \Rightarrow \textcircled{1} \quad \frac{z k_1}{F} = \frac{(30-z) k_2}{2F}$$

$$2z = 30 - z$$

$$z = \frac{30}{3} \Rightarrow z = 10 \text{ mm}$$

find x_1

$$\frac{60-z}{6} = \frac{z}{x_1}$$

$$x_1 = \frac{(10)(6)}{60-10} = 1.2 \text{ mm}$$

$$k = \frac{F}{x} = \frac{3 \text{ N}}{1.2 \text{ mm}} = 2.5 \text{ N/mm}$$