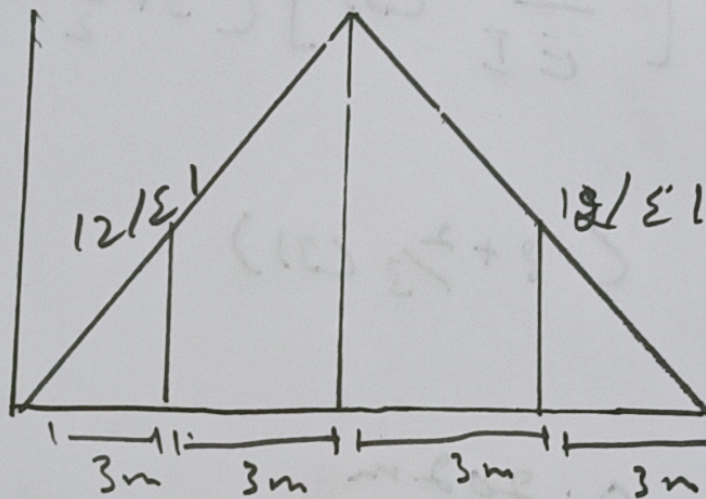
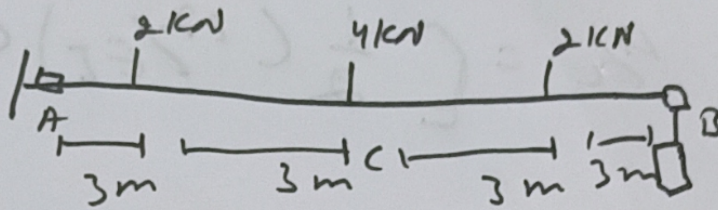


Assignment # 03

(1)

Question # 2

Solution:



$$Q \frac{A}{C} = \frac{1}{2} \left(\frac{12}{EI} \right) (3) + \left(\frac{12}{EI} \right) (3) + \frac{1}{2} \left(\frac{6}{EI} \right) (3)$$

$$Q \frac{A}{C} = \left(\frac{18}{EI} \right) + \left(\frac{36}{EI} \right) + \left(\frac{9}{EI} \right)$$

$$Q \frac{A}{C} = \frac{63}{EI} \Rightarrow 63 \left(200 \times 10^6 \right) \left(6 \times 10^6 \right) \left(10000 \right)^{-4}$$

②

$$C\theta_{A/C} = 0.0525 \text{ rad}$$

$$C\theta_A = 0.0525 \text{ rad/m}$$

$$t_{A/C} = \left[\frac{1}{2} \left(\frac{12}{EI} \right) (3) \right] \left(\frac{2}{3} (3) \right)$$

$$+ \left[\frac{12}{EI} (3) \right] \left(3 + \frac{1}{2} (3) \right) + \left[\frac{1}{2} \left(\frac{6}{EI} \right) (3) \right]$$

$$\left(8 + \frac{2}{3} (3) \right)$$

$$= 0.202 \text{ m}$$

So,

$$DC = t_A / t_C = 0.202 \text{ m}$$

$$= 202 \text{ mm Ans}$$
