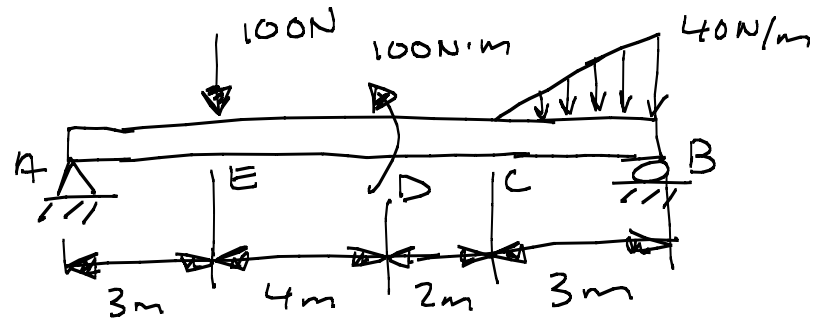


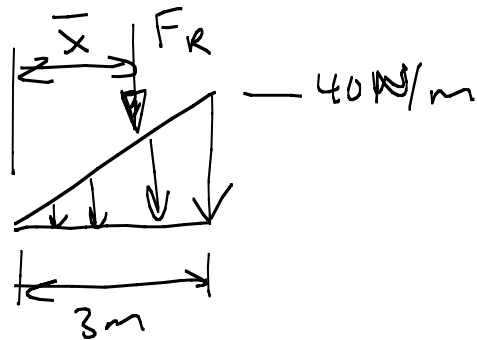
Problem 3

Determine

Replace the system with a single equivalent resultant force and couple moment about point A.

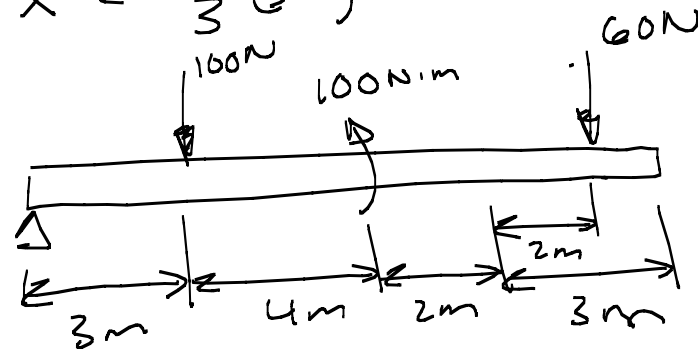


Distributed Load



$$F_R = \frac{1}{2} (3\text{m}) (40\text{N/m}) = 60\text{N}$$

$$\bar{x} = \frac{2}{3} (3\text{m}) = 2\text{m}$$



$$+\uparrow \sum F_y \Rightarrow F = -100\text{N} - 60\text{N} = \boxed{-160\text{N}}$$

$$\uparrow \sum M_A \Rightarrow M_{RA} = - (100\text{N}) (3\text{m}) + 100\text{N}\cdot\text{m} - (60\text{N}) (11\text{m})$$

$$M_{RA} = -860\text{N}\cdot\text{m}$$

