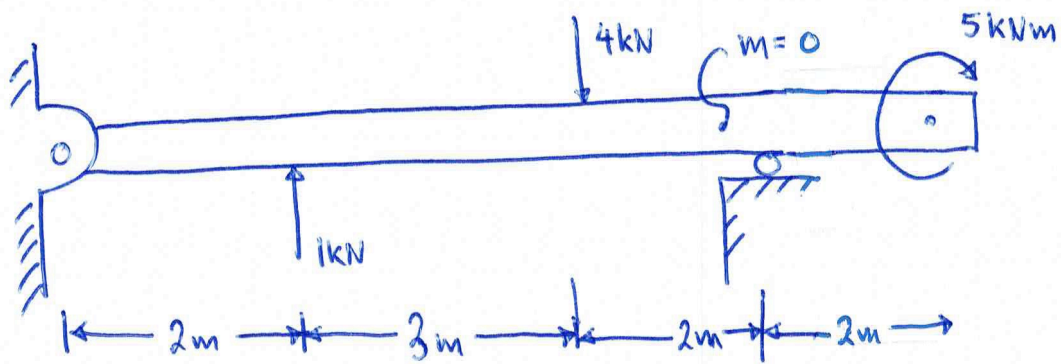
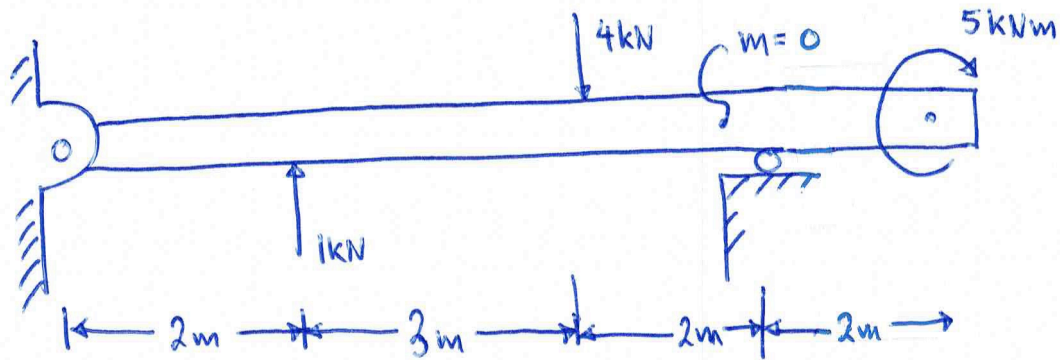


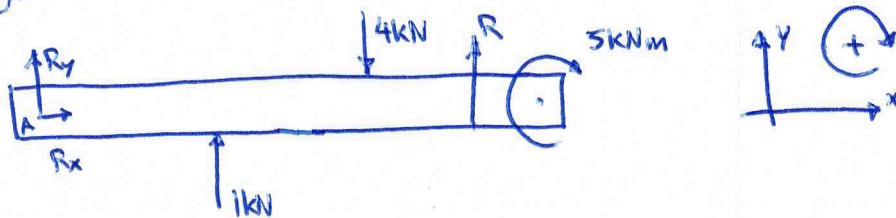
Determine all the reaction forces on the beam member



Determine all the reaction forces on the beam member



FBD:



Newton's 2nd Law:

$$\sum F_x = m\ddot{x} = R_x \quad (1)$$

$$\sum F_y = m\ddot{y} = R_y + 1000 - 4000 + R \quad (2)$$

$$\sum M = I\ddot{\theta} = -(2)(1000) + (5)(4000) - 7R + 5000 \quad (3)$$

Solve (1) for R_x :

$$R_x = 0 \quad (1a)$$

Solve (3) for R :

$$R = \frac{1}{7} (-2000 + 20000 + 5000)$$

$$R = 3286 \text{ N} \quad (3a)$$

Solve (2) for R_y :

$$R_y = 3000 - R$$

sub (3a) into above:

$$R_y = 3000 - [3286] = -286 \text{ N}$$