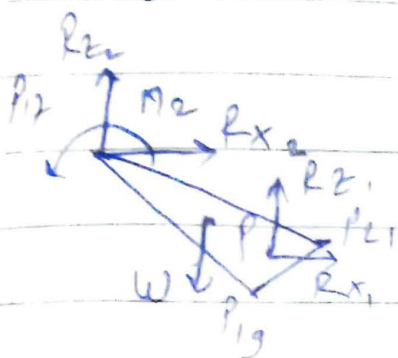


Foot :-



$$m = 9.2 \text{ N} \quad I = \text{---}$$

$$= 0.938 \text{ kg}$$

$$\sum F_x = 0$$

$$R_{x2} + R_{x1} = 0$$

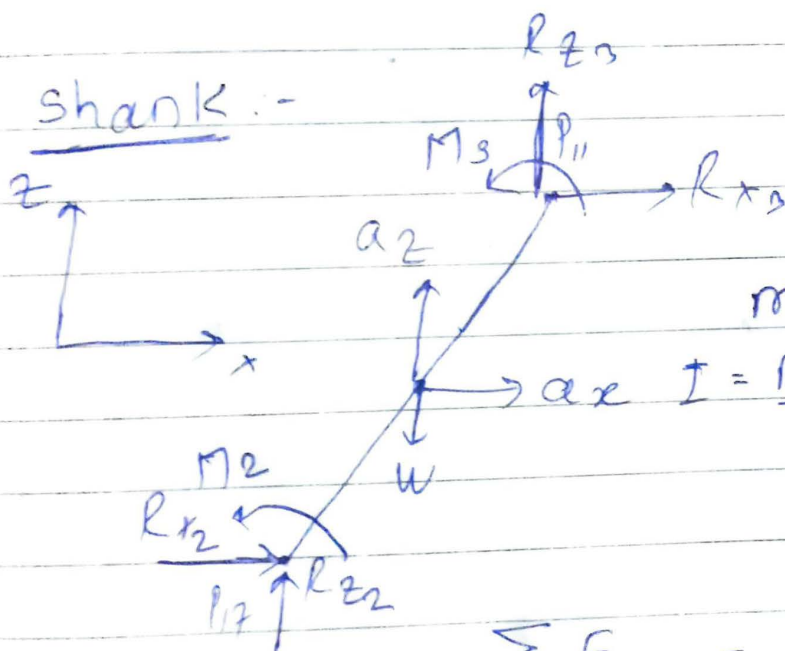
$$\sum F_z = 0$$

$$R_{z2} + R_{z1} - mg = 0$$

$$\sum M_2 = I\alpha$$

$$M_2 - R_{z1}(P_x - P_{comx}) - R_{z2}(P_{x2} - P_{comx}) = 0$$

Shank :-



$$m = 39.1 \text{ N} = 3.98 \text{ kg}$$

$$I = \frac{m l^2}{12} = 48.145 \times 10^{-3} \text{ kgm}^2$$

$$\sum F_x = m a_x$$

$$R_{x2} + R_{x3} = m a_x$$

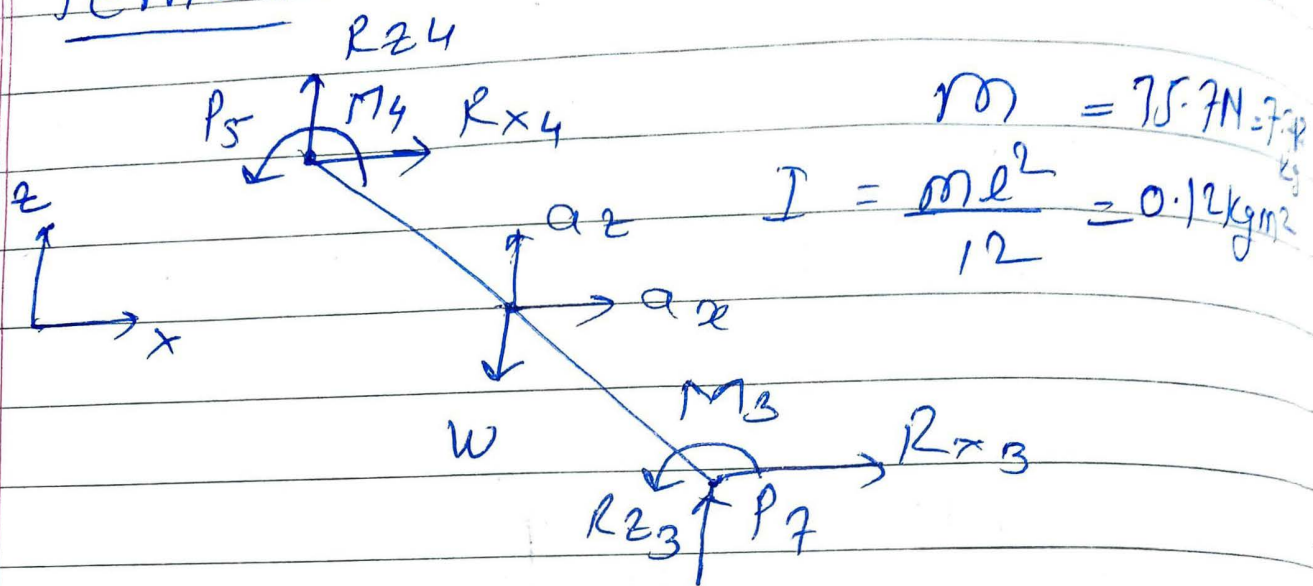
$$\sum F_z = m a_z$$

$$R_{z2} + R_{z3} - W = m a_z$$

$$\sum M_2 = I_2 \alpha \quad (\text{about C.O.M})$$

$$M_2 + M_3 - (R_{z2} - R_{z3})(P_{11x} - P_{12x}) - \frac{(R_{x2} - R_{x3})(P_{11z} - P_{12z})}{2} = I \alpha$$

femur :-



$$m = 75.7 \text{ N} = 7.7 \text{ kg}$$

$$I = \frac{m l^2}{12} = 0.12 \text{ kg m}^2$$

$$\sum F_x = \text{max}$$

$$R_{x4} + R_{x3} = \text{max}$$

$$\sum F_z = \text{max}$$

$$R_{z4} + R_{z3} - W = \text{max}$$

$$\sum M_z = I \alpha \quad (\text{about C.O.M})$$

$$M_3 + M_4 + (R_{z3} - R_{z4})(\underline{P_{7x} - P_{5x}})$$

$$+ \frac{(R_{x3} - R_{x4})(\underline{P_{5z} - P_{7z}})}{2} = I \alpha$$