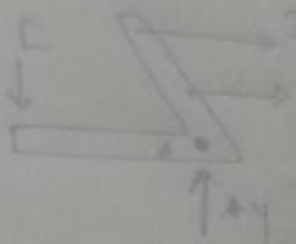
2)

$F_B = m_B g$ $\quad F_A = m_A g \sin\theta$

$$T = m_A g \sin\theta = m_B g$$

3)



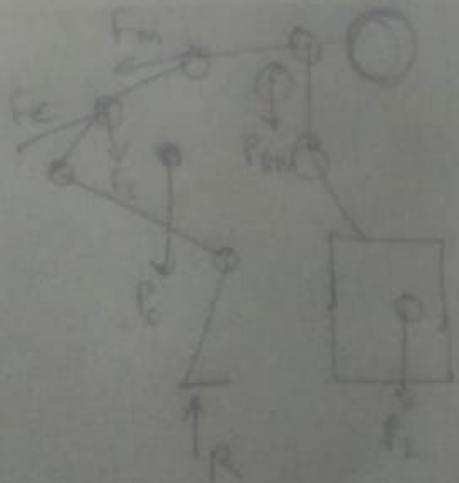
$$(1.5)m\,(20\,lb) = 30\,ft\text{-}lb$$

$$\Rightarrow \sum F_x = A_x + 20 - 0$$

$$\sum M_A = F(5) - (20)(1.5) - 30 = 0$$

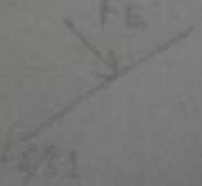
$$\Rightarrow F = 16\,lb$$

4)

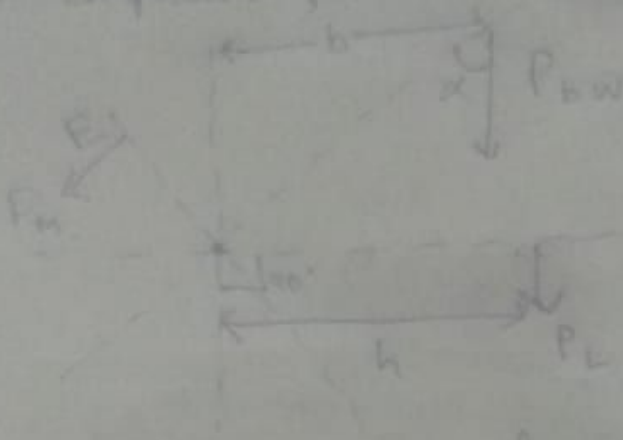


$$M_{B/A} = \sum_i M_i$$

$$F_M \cdot E = \sum_i M_i$$



For compression,



Shear or compression force can be calcu
through equilibrium.

Σ moment

$$P_{BW} \times b + P_L h + F_m E = 0$$

In [redacted] canal plane,

$$P_{BW} \sin\alpha + P_L \sin\alpha - F_S = 0$$

In tensile axis,

$$P_{BW} \cos\alpha + P_L \cos\alpha + F_m + F_C = 0$$

$\therefore$ $R = P_S + P_W + P_L$

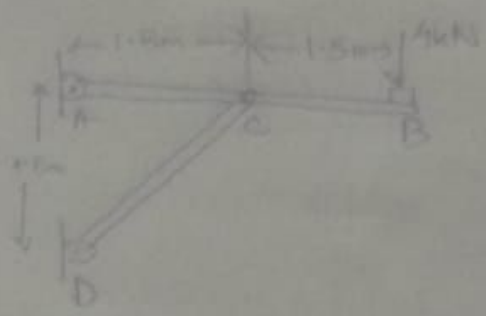
2022-2-28 21:35

ASSIGNMENT-1

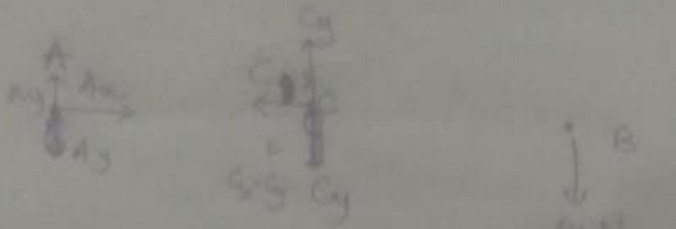
BIOMECHANICS

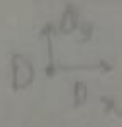
20BM0014

1)



→





ΣM_A $4kN \times 2^{2} = C_y \times 1.5$

$C_y = 8\,kN$

ΣF_y $A_y + C_y = 4\,kN$

$A_y = -4\,kN$

$= 4\,kN$ downwards.