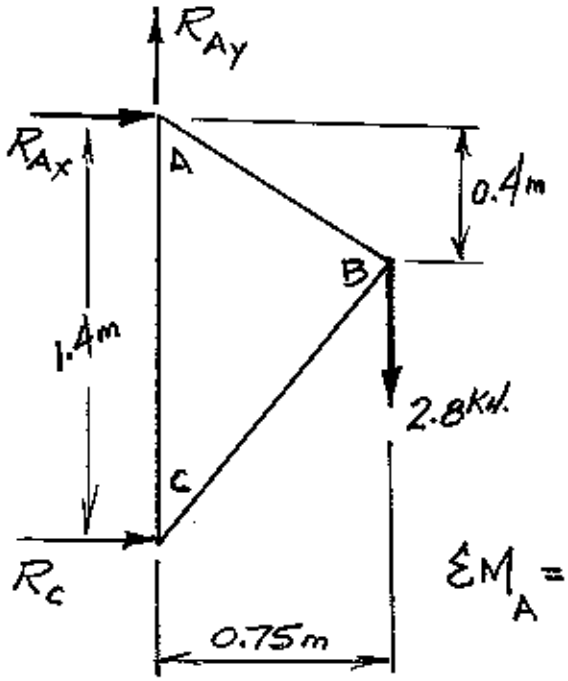


6.2 p. 287

STEP ① SOLVE FOR REACTIONS

EXTERNAL FORCES ON RIGID BODY.

$\Sigma F_x = 0 = R_{Ax} + R_c$ ⊕

$\Sigma F_y = 0 = R_{Ay} - 2.8^{KN.}$

$\boxed{R_{Ay} = 2.8^{KN} \uparrow}$

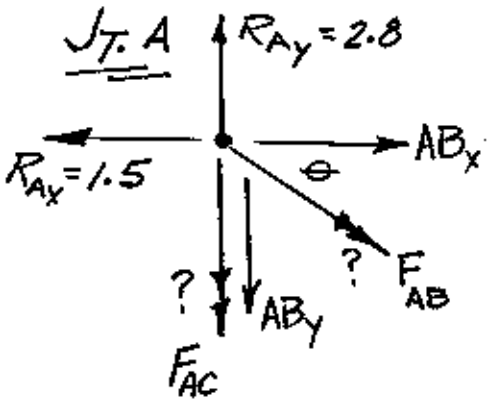
$\Sigma M_A = 0 = R_c (1.4\,m) - 2.8\,(0.75\,m)$

$R_c = \dfrac{2.8^{KN}(0.75\,m)}{1.4\,m} = \boxed{1.5^{KN} = R_c}$

BACK SUB., $\Sigma F_x = 0 = R_{Ax} + 1.5^{KN}$ $\therefore$ $\boxed{R_{Ax} = 1.5^{KN} \leftarrow}$

STEP ② INTERNAL FORCES IN MEMBERS.

JT. A



$\theta = \tan^{-1} \dfrac{0.4\,m}{0.75\,m} = 28.07°$

$\Sigma F_x = 0 = -1.5 + F_{AB} \cos 28.07°$

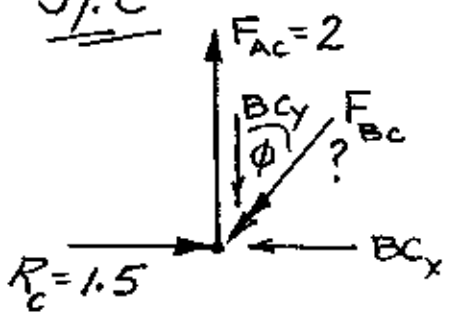
$\boxed{F_{AB} = 1.7^{KN.}\ T}$

$\Sigma F_y = 0 = 2.8 - F_{AC} - F_{AB} \sin 28.07°$

$F_{AC} = 2.8 - (1.7) \sin 28.07° = 2$

$\boxed{F_{AC} = 2^{KN}\ T}$

JT. C



$\phi = \tan^{-1} \dfrac{0.75\,m}{1.0\,m} = 36.87°$

$\Sigma F_x = 0 = 1.5 - F_{BC} \sin 36.87°$

$\boxed{F_{BC} = 25^{KN}\ C}$

T = TENSION MEMBER
C = COMPRESSION MEMBER

G. MILANO