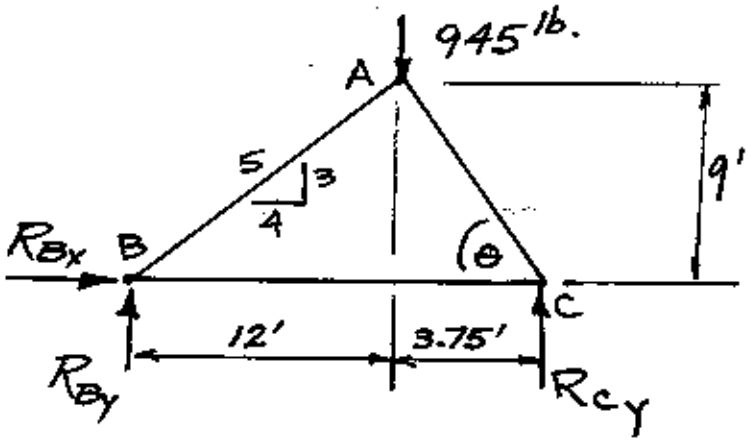
PROB. 6.3 p. 287



(+)

$\theta = \tan^{-1}\frac{9}{3.75} = 67.38°$

STEP. 1. Solve for Reactions

$\Sigma F_x = 0 = R_{Bx}$ ✓

$\Sigma F_y = 0 = R_{By} + R_{Cy} - 945^{lb.}$

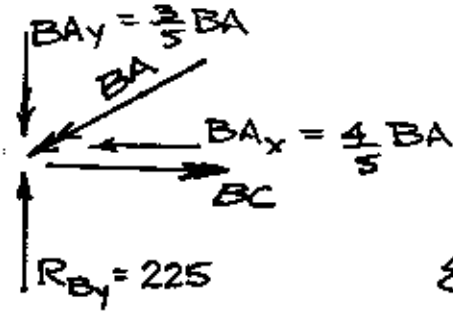
$\Sigma M_B = 0 = -945^{lb}(12') + R_{Cy}(15.75')$ $\therefore \boxed{R_{Cy} = 720^{lb.}\uparrow}$

BACK SUB.

$\therefore R_{By} = 945 - (720)$ $\therefore \boxed{R_{By} = 225^{lb}\uparrow}$

STEP. 2. INTERNAL FORCES

JT. B



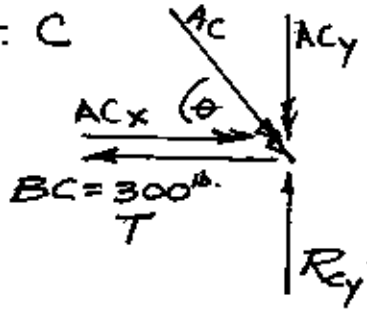
$\Sigma F_y = 0 = 225 - BA_y$

$\boxed{BA = \frac{5}{3}(225) = 375^{lb.}\,C}$

$\Sigma F_x = 0 = -\frac{4}{5}(375^{lb}) + BC$

$\boxed{BC = 300^{lb.}\,T}$

JT. C



$\Sigma F_x = 0 = AC_x - 300$

$AC\cos 67.38° = 300^{lb.}$

$\boxed{AC = 780^{lb.}\,C}$

$\Sigma F_y = 0$ to check

$AC\sin\theta = 720^{lb.}$

$780\sin 67.38° = 720$ ✓ OK.

AB =	375^{lb} C
AC =	$780^{lb.}$ C
BC =	300^{lb} T