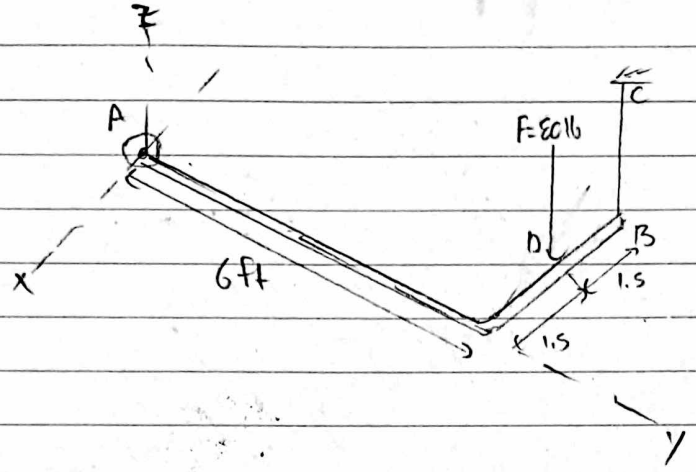
Solutions: 21-5-5.7-MK-04




equations

$\Sigma F_x = 0 \rightarrow \boxed{A_x = 0}$

$\Sigma F_y = 0 \rightarrow \boxed{A_y = 0}$

$\Sigma F_z = 0 = A_z - 80\,lb + F_{BC}$

$\Sigma M_x = M_A - (80\,lb)(6\,ft) + F_{BC}(6\,ft)$

$\Sigma M_y = 0 = F_{BC}(3\,ft) - (80\,lb)(1.5\,ft)$ $\boxed{(M_A)_y = 0}$

$F_{BC} = \frac{(80\,lb)(1.5\,ft)}{3\,ft} = \boxed{40\,lb}$

$\Sigma M_z = 0 \rightarrow \boxed{(M_A)_z = 0}$

$\Sigma F_z = 0 = A_z - 80\,lb + 40\,lb \rightarrow \boxed{A_z = 40\,lb}$

$\Sigma M_x = 0 = (M_{A_x}) - (80\,lb)(6\,ft) + (40\,lb)(6\,ft)$

$M_A = (80\,lb)(6\,ft) - (40\,lb)(6\,ft) \Rightarrow \boxed{(M_A)_x = 240\,lb\text{-}ft}$