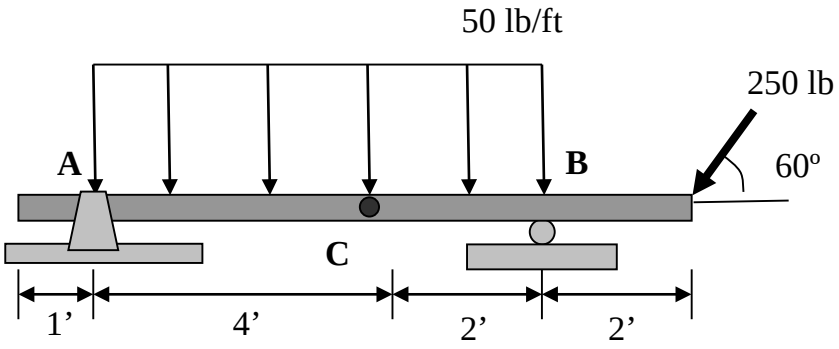
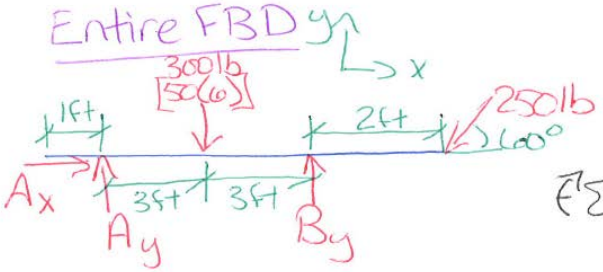
Problem 11: Determine the internal normal force, shear force, and moment acting at point *C*.



Entire FBD



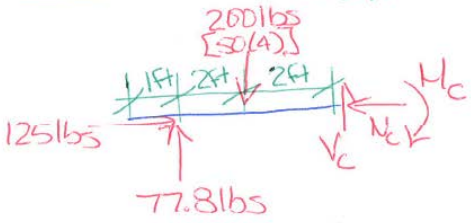
$\rightarrow\sum F_x = 0 = A_x - 250\cos 60°$

$A_x = 125 \text{ lbs} \rightarrow$

$\circlearrowleft\sum M_B = 0 = A_y(6) - 300(3) + (250\sin 60)(2)$

$A_y = 77.8 \text{ lbs} \uparrow$

FBD of AC



$\rightarrow\sum F_x = 0 = 125 - N_C$

$N_C = 125 \text{ lbs} \leftarrow \text{ on AC}$

$\uparrow\sum F_y = 0 = 77.8 - 200 + V_C$

$V_C = 122.2 \text{ lbs} \uparrow \text{ on AC}$

$\circlearrowleft\sum M_C = 0 = M_C + 77.8(4) - 200(2)$

$M_C = 88.8 \text{ lb·ft} \circlearrowright \text{ on AC}$

ANSWER: $N_C = 125.0$ lb ← $V_C = 122.2$ lbs ↑ $M_C = 88.8$ ft-lbs CW All on AC