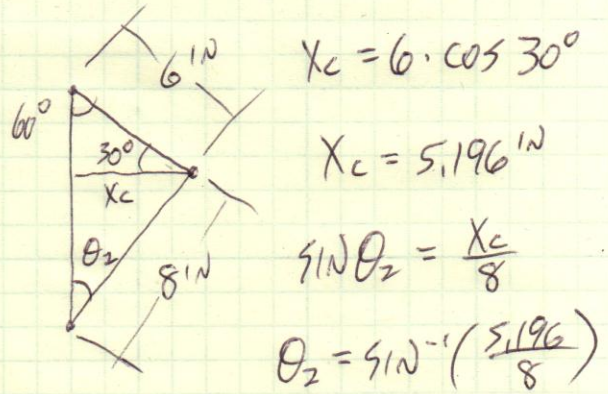


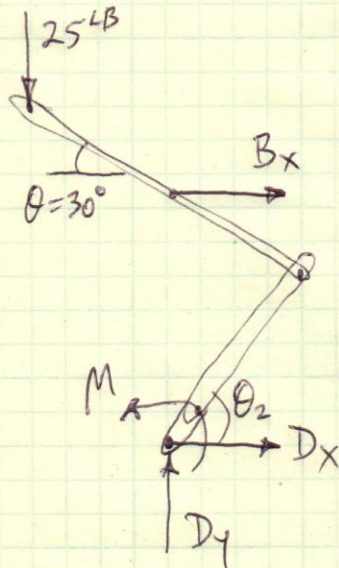
FIND M FOR $\theta = 30^\circ$

LOCATE POINTS:

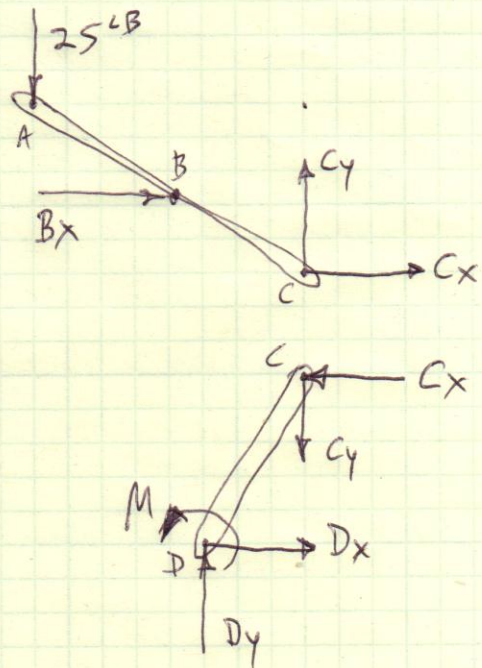


$\theta_2 = 40.5^\circ$

FBD: ENTIRE SYSTEM



FBD: DISASSEMBLE



ABC

$\sum F_x = 0: C_x + B_x = 0$

$\sum F_y = 0: C_y = 25 \text{ lb}$

PROB. 6.133 CONT.

ABC CONT:

$$\sum M_C = 0 \uparrow: (25 \text{ LB})(16 \cdot \cos 30^\circ) - B_x(6 \cdot \sin 30^\circ) = 0$$

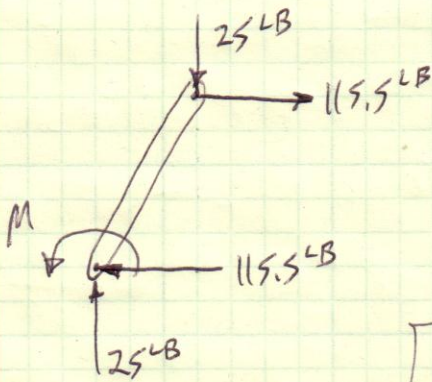
$$B_x = 115.5 \text{ LB}$$

$$C_x = -B_x = -115.5 \text{ LB}$$

MEMBER CD

$$\sum F_x = 0: D_x = C_x = -115.5 \text{ LB}$$

$$\sum F_y = 0: D_y = C_y = 25 \text{ LB}$$



$$\sum M_D = 0 \uparrow:$$

$$-(115.5 \text{ LB})(8 \cdot \cos 40.5^\circ) - (25 \text{ LB})(8 \cdot \sin 40.5^\circ)$$

$$+ M = 0$$

$$M = 832.3 \text{ IN-LB}$$