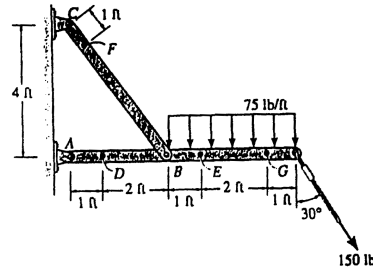


1-11 Determine the resultant internal loadings acting on the cross sections through points *F* and *G* of the frame.



Member *AG* :

$$\curvearrowleft + \Sigma M_A = 0; \quad \frac{4}{5} F_{BF}(3) - 300(5) - 150 \cos 30^\circ (7) = 0$$

$$F_{BF} = 1003.9 \text{ lb}$$

For point *F* :

$$\rightarrow + \Sigma F_x = 0; \quad V_F = 0 \quad \text{Ans}$$

$$\uparrow + \Sigma F_y = 0; \quad N_F - 1003.9 = 0$$

$$N_F = 1004 \text{ lb} \quad \text{Ans}$$

$$\curvearrowleft + \Sigma M_F = 0; \quad M_F = 0 \quad \text{Ans}$$

For point *G* :

$$\leftarrow + \Sigma F_x = 0; \quad N_G - 150 \sin 30^\circ = 0$$

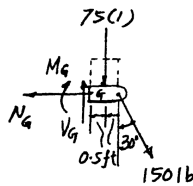
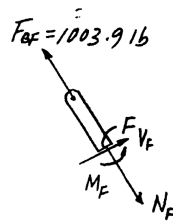
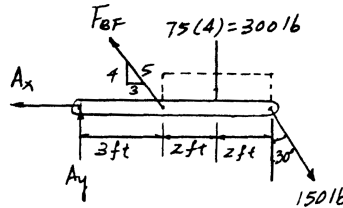
$$N_G = 75.0 \text{ lb} \quad \text{Ans}$$

$$+ \uparrow \Sigma F_y = 0; \quad V_G - 75(1) - 150 \cos 30^\circ = 0$$

$$V_G = 205 \text{ lb} \quad \text{Ans}$$

$$\curvearrowleft + \Sigma M_G = 0; \quad -M_G - 75(1)(0.5) - 150 \cos 30^\circ (1) = 0$$

$$M_G = -167 \text{ lb} \cdot \text{ft} \quad \text{Ans}$$



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