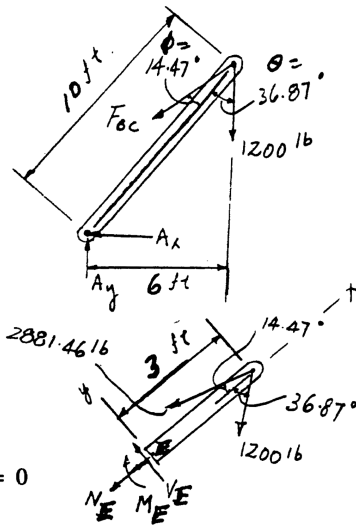
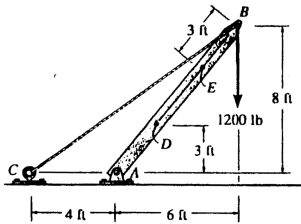


1-7 Solve Prob. 1-6 for the resultant internal loadings acting at point E.



$$\theta = \tan^{-1}\left(\frac{6}{8}\right) = 36.87^\circ$$

$$\phi = \tan^{-1}\left(\frac{10}{8}\right) - 36.87^\circ = 14.47^\circ$$

Member AB :

$$\curvearrowleft + \Sigma M_A = 0; \quad F_{BC} \sin 14.47^\circ(10) - 1200(6) = 0$$

$$F_{BC} = 2881.46 \text{ lb}$$

Segment BE :

$$\rightarrow + \Sigma F_x = 0; \quad -N_E - 2881.46 \cos 14.47^\circ - 1200 \cos 36.87^\circ = 0$$

$$N_E = -3750 \text{ lb} = -3.75 \text{ kip} \quad \text{Ans}$$

$$\uparrow + \Sigma F_y = 0; \quad V_E + 2881.46 \sin 14.47^\circ - 1200 \sin 36.87^\circ = 0$$

$$V_E = 0 \quad \text{Ans}$$

$$\curvearrowleft + \Sigma M_E = 0; \quad 2881.46 \sin 14.47^\circ(3) - 1200 \sin 36.87^\circ(3) - M_E = 0$$

$$M_E = 0 \quad \text{Ans}$$

Notice that member AB is the two-force member ; therefore the shear force and moment are zero.

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