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$$W = 360(9.81) = 3531.60 \text{ N}$$

From a free-body diagram of the bar  $ABC$ , the equations of equilibrium give

$$\rightarrow \Sigma F_x = 0: \quad -A_x + F_{BD} \cos \phi = 0$$

$$\uparrow \Sigma F_y = 0: \quad -A_y + F_{BD} \sin \phi - W = 0$$

$$\curvearrowright \Sigma M_A = 0: \quad 1430(F_{BD} \sin \beta) - (2700 \cos 16^\circ)W = 0$$

$$\tan \phi = \frac{h}{b} = \frac{900 + 1430 \sin 16^\circ}{1430 \cos 16^\circ - 890}$$

$$\phi = 69.471^\circ \quad \beta = \phi - 16^\circ = 53.471^\circ$$

$$F_{BD} = 7976.730 \text{ N}$$

$$A_x = 2797.2911 \text{ N} \quad A_y = 3938.5663 \text{ N}$$

Then, from a free-body diagram of the left section of the bar, the equations of equilibrium give

$$\Sigma F_x = 0: \quad P - A_x \cos 16^\circ - A_y \sin 16^\circ = 0$$

$$\Sigma F_y = 0: \quad V + A_x \sin 16^\circ - A_y \cos 16^\circ = 0$$

$$\Sigma M_{cut} = 0: \quad M - (0.530 \sin 16^\circ)A_x + (0.530 \cos 16^\circ)A_y = 0$$

$$P = 3770 \text{ N} \dots\dots\dots \text{Ans.}$$

$$V = 3010 \text{ N} \dots\dots\dots \text{Ans.}$$

$$M = -1598 \text{ N} \cdot \text{m} \dots\dots\dots \text{Ans.}$$

