PROBLEM 2.9

A telephone cable is clamped at $A$ to the pole $AB$. Knowing that the tension in the right-hand portion of the cable is $T_2 = 1000 \text{ lb}$, determine by trigonometry (a) the required tension $T_1$ in the left-hand portion if the resultant $R$ of the forces exerted by the cable at $A$ is to be vertical, (b) the corresponding magnitude of $R$.

PROBLEM 2.18

For the hook support of Prob. 2.10, knowing that $P = 75 \text{ N}$ and $\alpha = 50^\circ$, determine by trigonometry the magnitude and direction of the resultant of the two forces applied to the support.

PROBLEM 2.10 Two forces are applied as shown to a hook support. Knowing that the magnitude of $P$ is 35 N, determine by trigonometry (a) the required angle $\alpha$ if the resultant $R$ of the two forces applied to the support is to be horizontal, (b) the corresponding magnitude of $R$.

PROBLEM 2.34

Determine the resultant of the three forces of Problem 2.24.

PROBLEM 2.24 Determine the $x$ and $y$ components of each of the forces shown.
**PROBLEM 2.46**

Knowing that $\alpha = 55^\circ$ and that boom $AC$ exerts on pin $C$ a force directed along line $AC$, determine $(a)$ the magnitude of that force, $(b)$ the tension in cable $BC$.

**PROBLEM 2.57**

Two cables tied together at $C$ are loaded as shown. Knowing that the maximum allowable tension in each cable is 800 N, determine $(a)$ the magnitude of the largest force $P$ that can be applied at $C$, $(b)$ the corresponding value of $\alpha$. 