ME 2120 Recitation 1

Useful Equations

$$sin\theta = \frac{opposite}{hypotenuse}$$

$$cos\theta = \frac{adjacent}{hypotenuse}$$

$$tan\theta = \frac{opposite}{adjacent}$$

$$\Delta x = x_f - x_0$$

$$\Delta y = y_f - y_0$$

$$\Delta z = z_f - z_0$$

$$\sum F = 0$$

$$\sum F_x = 0$$

$$\sum F_y = 0$$

$$\sum F_z = 0$$

$$\sum M = 0$$

2.2 Two forces **P** and **Q** are applied as shown at point *A* of a hook support. Knowing that $P = 60$ lb and $Q = 25$ lb, determine graphically the magnitude and direction of their resultant.

2.15 Solve Prob. 2.2 by trigonometry.

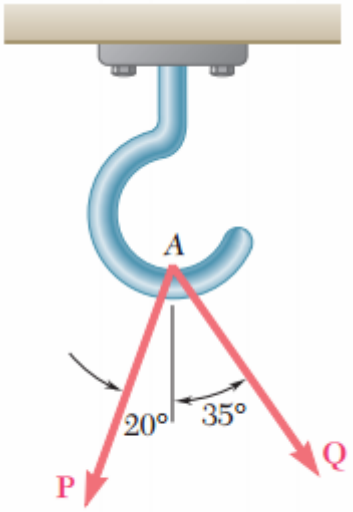


Fig. P2.1 and P2.2

2.7 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 α if the resultant **R** of the two forces applied to the support is to be horizontal, (*b*) the corresponding magnitude of **R**.

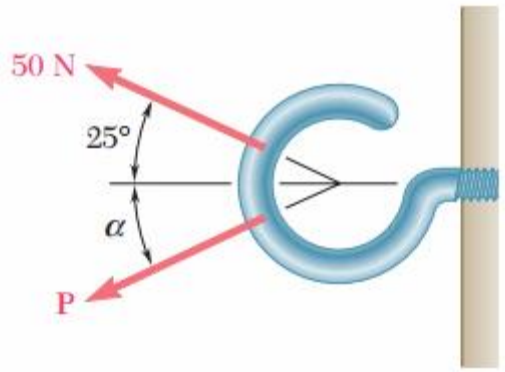


Fig. P2.7

2.36 Knowing that the tension in cable BC is 725 N, determine the resultant of the three forces exerted at point B of beam AB.

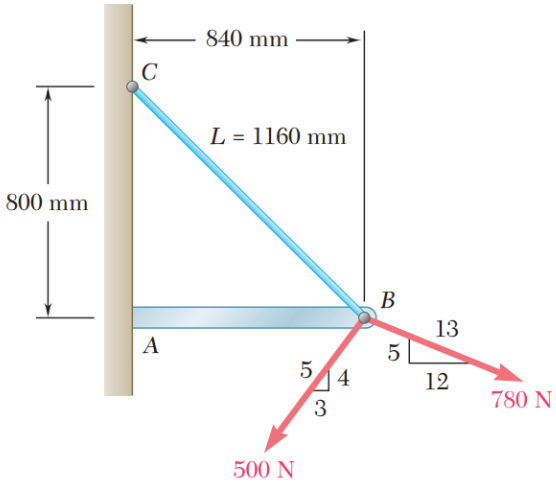
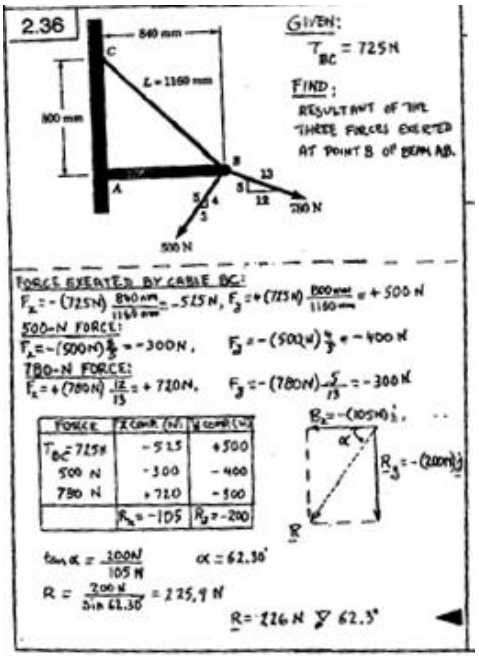


Fig. P2.36



2.130 Two cables are tied together at C and loaded as shown. Determine the tension (*a*) in cable AC, (*b*) in cable BC.

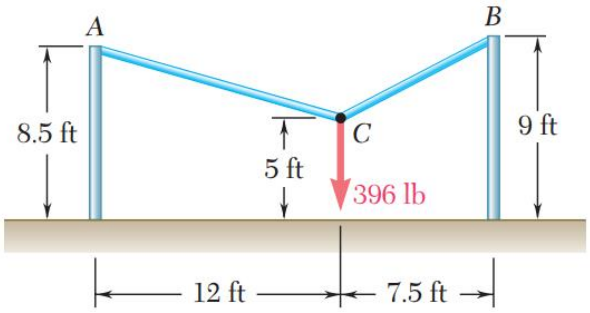


Fig. P2.130