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so many fake sites. this is the first one which worked! Many thanks

**Rectangular Components:** By referring to Fig. a, the  $x$  and  $y$  components of  $F_1$ ,  $F_2$ , and  $F_3$  can be written as

$$\begin{aligned} (F_1)_x &= 250 \cos 30^\circ = 216.51 \text{ lb} & (F_1)_y &= 250 \sin 30^\circ = 125 \text{ lb} \\ (F_2)_x &= 300 \left(\frac{4}{5}\right) = 240 \text{ lb} & (F_2)_y &= 300 \left(\frac{3}{5}\right) = 180 \text{ lb} \\ (F_3)_x &= 200 \left(\frac{3}{4}\right) = 150 \text{ lb} & (F_3)_y &= 200 \left(\frac{3}{4}\right) = 150 \text{ lb} \end{aligned}$$

**Resultant Forces:** Summing the force components algebraically along the  $x$  and  $y$  axes,

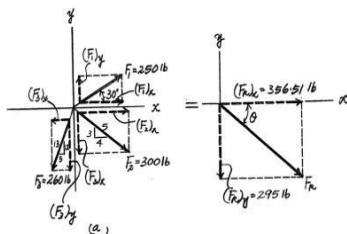
$$\begin{aligned} \sum_x (F_x)_x &= \Sigma F_x; & (F_R)_x &= 216.51 + 240 + 150 = 596.51 \text{ lb} \rightarrow \\ \sum_y (F_x)_y &= \Sigma F_y; & (F_R)_y &= 125 + 180 + 150 = 455 \text{ lb} \uparrow \end{aligned}$$

The magnitude of the resultant force  $F_R$  is

$$F_R = \sqrt{(F_R)_x^2 + (F_R)_y^2} = \sqrt{596.51^2 + 455^2} = 750 \text{ lb} \quad \text{Ans.}$$

The direction angle  $\theta$  of  $F_R$ , Fig. b, measured clockwise from the positive  $x$  axis, is

$$\theta = \tan^{-1} \left( \frac{(F_R)_y}{(F_R)_x} \right) = \tan^{-1} \left( \frac{455}{596.51} \right) = 38.0^\circ \quad \text{Ans.}$$



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