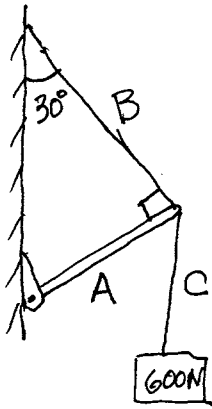
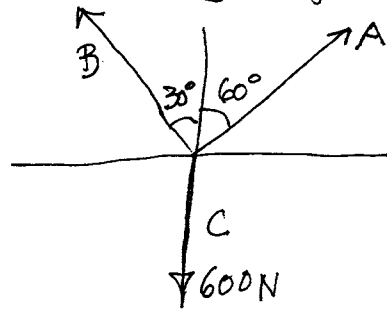


4.7



Free-body diagram

Obviously, $C = 600\text{N}$ Analytic Solution:

$$\sum F_x = 0 \Rightarrow -B \sin 30^\circ + A \sin 60^\circ = 0$$

$$B \sin 30^\circ = A \sin 60^\circ$$

$$\frac{1}{2} B = \frac{\sqrt{3}}{2} A$$

$$B = \sqrt{3} A \quad (1)$$

$$\sum F_y = 0 \Rightarrow$$

$$B \cos 30^\circ + A \cos 60^\circ - 600 = 0$$

$$B \frac{\sqrt{3}}{2} + A \left(\frac{1}{2}\right) = 600 \quad (2)$$

Subst. (1) into (2):

$$\frac{\sqrt{3} \sqrt{3} A}{2} + \frac{A}{2} = 600$$

$$2A = 600$$

$$\boxed{A = 300\text{N}} \quad (3)$$

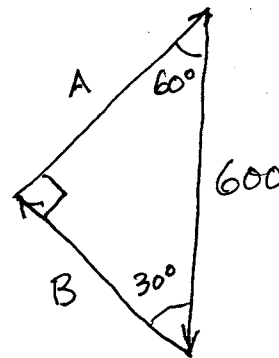
Subst. (3) into (1):

$$B = \sqrt{3}(300) = \boxed{300\sqrt{3}\text{N}}$$

$$\boxed{B = 520\text{N}}$$

Geometrical Solution:

We see that the three vectors form a right triangle when added to zero:



$$\frac{A}{600} = \cos 60^\circ = \frac{1}{2}$$

$$\boxed{A = 300\text{N}}$$

$$\frac{B}{600} = \sin 60^\circ = \frac{\sqrt{3}}{2}$$

$$\boxed{B = 300\sqrt{3} = 520\text{N}}$$