## Vector Components

**Instructions:** *In your journal sketch and label the horizontal and vertical components for each of the following vectors. Of course, sketch the given vector first. Then calculate the x- and y-components using trigonometry.*

1. 350 km @ 60o S of E
2. 40 m @ 30o N of E
3. 100 $^{m}/\_{s^{2}}$ @ 45o N of E
4. 500 $^{cm}/\_{s}$ @ 30o N of W

*For the following problems, draw a scale diagram, labeling the vectors and the resultant. Then use the component method to determine the magnitude and direction of the resultant displacement.*

1. 250 m East 100 m South 100 m @ 45 degrees S of E
2. 100 m North 30 m West 150 m @ 30 degrees S of E
3. 10 m East 10 m North 10 m West 10 m South

*For the last problem, draw a scale diagram, labeling the vectors and the resultant. Then use the component method to determine the magnitude and direction of the resultant velocity.*

1. Classic problem of a plane flying into a crosswind:

Plane’s Velocity: 100 $^{mi}/\_{hr}$ North

Wind Velocity: 60 $^{mi}/\_{hr}$ East

Resultant Velocity = $^{mi}/\_{hr}$ Direction: