# Review Section 6.3 #2 Precalculus w/ Trig Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Period \_\_\_\_\_

1. Find the component form and magnitude of the vector **v** that has initial point  and terminal point .

component form \_\_\_\_\_\_\_\_\_ magnitude \_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. Let **v**  and **w** , and find each of the following vectors.

a) 2**v** b) 2**wv** 

3. Find a unit vector in the direction of **v**.

4. Find the direction angle of **v** = **i** **j** to the nearest thousandth of a degree.

5. Find the vector **v** with 5 and in the same direction as .

6. Find the component form of the vector that represents a ball thrown with an initial velocity of 100 feet per second, at an angle of 40° with the horizontal.

7. Forces with magnitudes of 900 newtons and 350 newtons act on a machine part at angles of 50° and , respectively, with the positive x-axis. Find the direction and magnitude of the resultant of these forces. Round both answers to the nearest thousandth.

8. An airplane is traveling at a speed of 550 miles per hour with a bearing of 140° at a fixed altitude with a negligible wind velocity. As the airplane reaches a certain point, it encounters a wind blowing with a velocity of 70 miles per hour in the direction of S40°W. What are the resultant speed and direction of the airplane? Round both answers to the nearest thousandth.