Name_____ Due Date _____ Period_____

15.2 Problem Solving Using Vectors

Model each situation using vectors and then solve the problem.

1. Suppose a plane is traveling east at 110 km/her with a headwind of 20 km/hr. Model the situation with vectors and find the resulting speed of the plane.

2. Suppose a person is canoeing due east across a river at 4 mph. The river is flowing south at 3 mph. Model the situation with vectors and find the resulting speed of the canoe.

3. Camden sails his boat due east at a rate of 10 knots. There is a current of 3 knots moving south. Model the situation with vectors and find the resulting speed of the boat.

4. Reagan is going to swim a section of the River that is 3 miles wide and has a current of 2 miles per hour. She can swim at a rate of 4.5 miles per hour. Model the situation with vectors. Estimate how far downstream she will be when she reaches the other side.

5. Write your own problem that could be solved using vectors.

Answer the following Review Problems:

6. Describe what you know about the vector $v = \langle 7, -3 \rangle$.

7. What is the magnitude of the vector $v = \langle 7, -3 \rangle$?

8. Given the following vertices of a square, (2,-1) (4,2) and (1,4) what would the missing vertex be?