Name

 Date Hr

**PHYSICS Unit IV: Worksheet 2**

1. Determine the magnitude and direction of each of the following velocity vectors.

 Scale 1cm = 5 m/s (ex. 36 m/s at 43° North of West)



2. Determine the resultant of each of the following.

a. A woman can row 16m/s in calm water. There is a 17 m/s current flowing in the same direction. What is her resulting velocity?

 b. A man can row due east at 15 m/s. He then encounters a 30 m/s current flowing in

 the other direction. What is his resulting Velocity?

3. Add all of the following vectors by sliding them head to tail. Then draw in the

 resultant and determine its magnitude graphically. Scale: 1cm = 10 m/s



4. Sue and Jenny kick a soccer ball at exactly the same time. Sue’s foot exerts a force of 66 N north. Jenny’s foot exerts a force of 88 N east. What is the magnitude and direction of the resultant force on the ball?

5. A boat is traveling due East at 40 km/hr. A current is flowing due South at 23

km/hr. What is the boat’s resulting velocity and direction?

6. Dave rows a boat across a river at 4 m/s. The river flows at 6 m/s and is 360 m across.

 a. In what direction,(angle) relative to the shore, does Dave’s boat go?

1. What is Dave’s new speed?

7. A plane is flying due South with an air speed of 150 km/hr. A 86 km/hr wind is

 blowing in a direction of 35 South of East. What is the plane’s resulting air

 speed and direction?

8. Determine the x and y components of each of the force vectors below. Show work.

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| a.  |  |
| b.  |  |
| c.  |  |
| d.  |  |