Combined Velocities WS Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Determine the Combined Velocities

1.) 10 m/s East Answer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

 7.5 m/s East

2.) 8 m/s East Answer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

 12 m/s W

3.) 11 m/s East Answer: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 11 m/s West

These ones you need to do Pythagoram theorem, I will walk you through the 1st one

 Pythagoram Theorem is a2 + b2 = c2

4.)

 9 m/s ?

How to Solve this:

Use Pythagoram Theorem: a2 + b2 = c2

a = 9 🡪 92 = 81

b = 12 🡪 122 = 144

81 + 144 = c2 🡪 225 = c2

√225 = c Answer is 15

 South

 12 m/s East

Now on your own

5.)

8 m/s

North

 8 m/w West Answer: \_\_\_\_\_\_\_\_\_\_

Same problems but you will have to draw the arrow to make sense of the word problem

6.) Two people are pushing a broken car. One pushes it 2 m/s East, the other pushes it 135 m/s East. What direction is the car move?

7.) Two soccer players kick a ball at the same time from opposite ends. Red #3 kicks to the right with a velocity of 5 m/s while Blue #5 kicks to the left with a velocity of 6.3 m/s. What direction will the ball move?

8.) An airplane flies north at 100 m/s through a 30 m/s cross wind blowing from the south. Determine the directional velocity of the plane.

9.) A plane flies with a velocity of 52 m/s south ina 12 m/s wind blowing the plane south. Find the combined direction and velocity.

10.) A boat heads east up a river with a velocity of 12 m/s. If the river flows at 6.0 m/s west. Find the combined direction and velocity

11.) A boy jumps upwards at a rate of 2 m/s. He is in an elevator also going up at a rate of 5 m/s. Find the combined direction and velocity.

12.) You are walking to your friends house. You go north at a velocity of 2 m/s and then turn on a street and go East at a velocity of 4 m/s. What is your combined velocity?