

1) A river flows at a speed of 12 m/s from north to south. A powerboat can move at a constant maximum speed of 23 m/s in still water.

- a. What is the maximum velocity of the boat upstream (upstream means traveling against the current)? _____
- b. What is the maximum velocity of the boat downstream? _____
- c. If the boat were headed east across the river at its maximum speed, what would the resultant velocity of the boat be?

2) A plane is travelling toward the east with a velocity of 120 km/h. It encounters a wind blowing toward the east at 0.20 km/min. What is the velocity of the plane in km/h?

3) A girl walks 26 m at an angle of 39° W of S.

- a. How far west of her starting point is she?

- b. How far south of her starting point is she?

4) A pitcher can throw a ball at a velocity of 125 km/h straight ahead (draw this down on your paper). If he throws the ball straight when a cross-wind is blowing at 28 km/h to the left,

a. What will be the **magnitude** of the ball's resultant velocity?

b. The direction of the ball will be off _____° to the (left, right).

5) A plane heads due north, but because of a wind blowing to the west, the plane flies at a **resultant** velocity of 620 mi/h, 22° W of N. What was the velocity of the wind?
