Physics HW 5

1) Which of the following sentences deal with vector quantities?

- (I) "I used to drive a 10-ton truck"
- (II) "You'll find a gas station if you follow this road 20 miles due north"
- (III) "The 10-volt battery is the one on your left"
- (a) I only
- (b) II only
- (c) III only
- (d) II and III
- (e) I, II, and III

2) In your own words, describe the difference between a vector quantity and a scalar quantity.

3.) A motorboat traveling 5m/s, East encounters a current traveling 2.5m/s, North. What is the resultant velocity of the motorboat? What direction is it traveling now? Be specific (include the angle with your direction)!

4.) Consider a plane flying south at a velocity of 150km/hr.

(a) What is the velocity of the plane if the plane encounters a tailwind at 35km/hr?

(b) What is the velocity of the plane if if the plane encounters a headwind at 35km/hr?

(c) What is the velocity of the plane if the plane encounters a side wind of 35km/hr, West?

5.) A motorboat traveling 6m/s, East encounters a currents traveling 3.8m/s, South. What is the total resultant velocity? What direction is it traveling now? Be specific (include the angle with your direction)!

Challenge Find x in the figure below:

