

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 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:

