Name: _____

VECTORS III

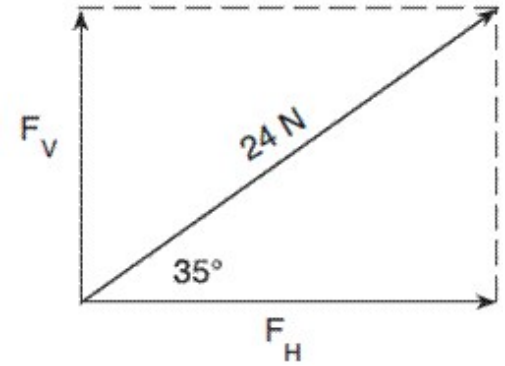
1. Which quantity is scalar?
   A. mass
   B. force
   C. momentum
   D. acceleration

2. Two 20.-newton forces act concurrently on an object. What angle between these forces will produce a resultant force with the greatest magnitude?
   A. 0°
   B. 45°
   C. 90.°
   D. 180.°

3. Which term identifies a scalar quantity?
   A. displacement
   B. momentum
   C. velocity
   D. time

4. A motorboat, which has a speed of 5.0 meters per second in still water, is headed east as it crosses a river flowing south at 3.3 meters per second. What is the magnitude of the boat's resultant velocity with respect to the starting point?
   A. 3.3 m/s
   B. 5.0 m/s
   C. 6.0 m/s
   D. 8.3 m/s

5. The vector diagram below represents the horizontal component, F_H, and the vertical component, F_V, of a 24-newton force acting at 35° above the horizontal.



What are the magnitudes of the horizontal and vertical components?
   A. F_H = 3.5 N and F_V = 4.9 N
   B. F_H = 4.9 N and F_V = 3.5 N
   C. F_H = 14 N and F_V = 20. N
   D. F_H = 20. N and F_V = 14 N

6. An airplane flies with a velocity of 750. kilometers per hour, 30.0° south of east. What is the magnitude of the eastward component of the plane's velocity?
   A. 866 km/h
   B. 650. km/h
   C. 433 km/h
   D. 375 km/h

7. The speedometer in a car does *not* measure the car's velocity because velocity is a
   A. vector quantity and has a direction associated with it
   B. vector quantity and does not have a direction associated with it
   C. scalar quantity and has a direction associated with it
   D. scalar quantity and does not have a direction associated with it