

### Quiz #1: Representing Motion

**Problem 1** (2 points)

Which one of the following is the longest length?

- a)  $10^0$  meters
- b)  $10^2$  centimeters
- c)  $10^4$  millimeters
- d)  $10^5$  micrometers
- e)  $10^7$  nanometers

**Problem 2** (2 points)

Three sticks are arranged to form a right triangle. If the lengths of the three sticks are 0.47 m, 0.62 m and 0.78 m, what are the three angles of the triangle?

- a)  $90^\circ$ ,  $45^\circ$ , and  $45^\circ$
- b)  $90^\circ$ ,  $62^\circ$ , and  $28^\circ$
- c)  $90^\circ$ ,  $59^\circ$ , and  $31^\circ$
- d)  $90^\circ$ ,  $48^\circ$ , and  $42^\circ$
- e)  $90^\circ$ ,  $53^\circ$ , and  $37^\circ$

**Problem 3** (2 points)

*Interpret* the following problem by drawing a motion diagram showing the object's position and its velocity vectors. Do *not* solve this problem or do any mathematics.

In a typical greyhound race, a dog accelerates to a speed of 20 m/s over a distance of 30 m. It then maintains this speed. What would be the greyhound's time in the 100 m dash?

**Problem 4** (4 points)

A saber-toothed tiger on the prowl walks east for 2.50 miles, and the spots prey and runs north at 5.0 km/hr for 47.5 minutes, and finally walks east for 2.00 kilometers. What is the magnitude of the tiger's net displacement, in meters?