

Honors Physics WS1

Show given information, equations, algebra, substitution, and units for full credit. Pay attention to significant figures. Use the back if you need more space. (1 mile = 1609 m)

- 1) Convert 80.0 mph to m/s (35.7m/s)
- 2) Convert 75 mph to km per hour (120 km/hr)
- 3) Convert 115 km per hour to mph (71.5mph)
- 4) Convert 50.0 cm² to m² (0.00500 m² or 5.00 x 10⁻³ m²)
- 5) If you run a complete loop around a track (400m) in 100 seconds, what is your average velocity?
What is your average speed? (0 m/s, 4 m/s)
- 6) Michael Phelps set the swimming world record for the men's 100 m butterfly in 2009, when he swam it in 49.82 seconds. (Use 100.0 m for your sig fig calculation)
 - a. What was his average speed in m/s? (2.007 m/s)
 - b. What was his average speed in mph? (4.490 mph)
- 7) You decide you want to figure out how deep the Grand Canyon is, so you bring your stopwatch to a location in the Grand Canyon. When you yell into the canyon, you hear your yell echo back from the floor of the canyon 7.20 seconds later. How deep is the canyon at this location? (Assume speed of sound is 340.0 m/s) (Ans: 1220 m)
- 8) Speed is (circle one)
 - a. A measure of how fast something is moving
 - b. Distance covered over a unit of time
 - c. A vector
 - d. All of the above
 - e. a. and b. only
- 9) Explain why distance can never be a smaller value than the displacement.