

## Physics 2204

### Worksheet #2 Uniform Motion

Answer each of the following questions showing all workings, and expressing answers to the correct number of significant figures.

1. Donovan Bailey ran the 100.0 m dash at the Atlanta Olympics in 9.84 s. Michael Johnson ran 200.0 m in 19.32 s, and 400.0 m in 43.49 s. Find the average speed for each race.
2. How far will a train travel in 45 s if its speed is 142 m/s.
3. A sneeze causes you to momentarily shut your eyes. If this process takes 0.50 s and you are moving at 30.0 km/h, how far will you travel in that time?
4. The speed of light is  $3.0 \times 10^8$  m/s. The speed of sound is 344 m/s. A flash of lightning occurs in a storm  $1.0 \times 10^4$  m away. How many seconds does it take for us to see the lightning and hear the thunder?
5. Jules Verne wrote a book called *Around the World in Eighty Days*. What was his average speed in m/s and km/h if the radius of Earth is  $6.4 \times 10^3$  km. (Hint: the distance around Earth is  $= 2\pi r$ ).
6. A motorcycle travels 200.0km[N] and then 350.0km[S] in 3.0h. Calculate the following:
  - a) distance the motorcycle travelled
  - b) displacement of the motorcycle
  - c) the average speed of the motorcycle.
  - d) the average velocity of the motorcycle.
7. George of the Jungle swings 125km[W] and then 275km[E] in 12h. Calculate the following:
  - a) distance
  - b) displacement
  - c) average speed
  - d) average velocity
8. The Roadrunner is trying his best to get away from the Coyote. He as just travelled 350.0m[W] in 15.0s and is now out of the Coyote's reach. Determine the following:
  - a) The Roadrunner's average speed
  - b) The Roadrunner's velocity.