**SPEED, VELOCITY, WORLD CLASS ATHLETES, AND YOU! Name**

Time yourself, or have someone else time you, to see how long it takes for you to run the 50.0m laid out in the hall. Be careful and watch out for others. Don’t hurt yourself, but run as fast as you can.

**TIME**

1. Calculate your average ***speed*** in m/s.

2. What is your average ***velocity*** in m/s?

3. Convert your average speed to miles/hour using dimensional analysis.

4. At your average speed, calculate ***how long*** it would take you to run 100.0m.

5. The world record for 100m is 9.58s for men, and 10.49s for women. If you were to race the world record holder, how far down the track would you be when they finished the race. Calculate for both sexes.

 Men’s Record Women’s Record

6. Use dimensional analysis to find the world record ***speed*** for both the men’s and women’s records in miles/hr.

 Men Women

7. Calculate ***how long*** (in hours) it would take you to run a marathon (26.2 miles) at the average speed that you ran in the hall.

8. The world record for the marathon is 2 hours 3 minutes and 59 seconds for men (2.07 hours); and 2 hours 15 minutes and 25 seconds for women (2.26 hours). If you were to race the world record holder, ***how far*** would you have run when they finish the race? Calculate for both sexes.

 Men’s Record Women’s Record

9. Some people may have calculated that they ran more than 26.2 miles when racing the world record holder. Since none of you are world record holders, and we will assume you did the math correctly; what could account for this?