

Name _____ Period _____ Date _____

Calculating Speed Questions

Apply the equation for speed to the following problems. Remember to *show all of your work*, including units, for every problem! Showing your work is the only way for others to know how you did things. And units are the only way for others to know what you ended up with. *No naked numbers!*

(You might wonder how fast speeds measured in SI units are compared to the “miles per hour” you know better. Here is a conversion to help you: $1 \text{ m/s} = 2.2 \text{ mph}$.)

1. *Review question:* Why is a stationary object like a tree or building a better reference point than a car or a bike?

2. *Review question:* Convert these measurements to the requested units:
 - a. $13 \text{ km} = \underline{\hspace{2cm}} \text{ cm}$
 - b. $4.3 \text{ g} = \underline{\hspace{2cm}} \text{ mg}$
 - c. $8 \text{ mm} = \underline{\hspace{2cm}} \text{ km}$
 - d. $720 \text{ mL} = \underline{\hspace{2cm}} \text{ L}$

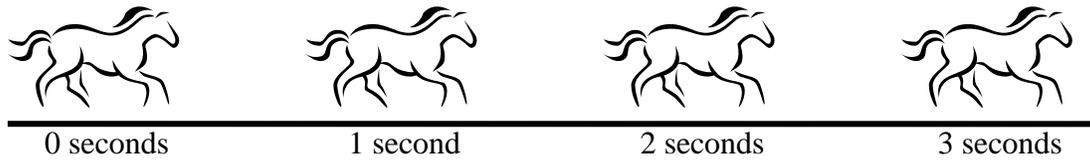
3. Tennis player Venus Williams can hit a ball at more than 120 miles per hour. At this speed, the ball can go the whole way across a 24 m tennis court in just 0.45 s. How fast is this in meters per second?

4. While Edward ran across a field, Bella timed him using a stopwatch. She later measured the size of the field. Here are her measurements:

Time to cross field	<u>2.4 seconds</u>
Size of field	<u>53 meters</u>

What was Edward's speed?

5. In this diagram, a horse is shown at different times. The diagram has a scale of 1:100, so 1 cm here represents 100 cm, or 1 m, for the real horse.



- Measure the distance travelled by the horse and find the horse's speed in m/s.
(Make sure you pick one part of the horse and measure it only – for example, you could always use the horse's nose.)
6. At 3:30 PM, Angela left school. She walked a distance of 1.1 km and got home at 3:45 PM. What was her speed in km/hr? (Hint: You know that 30 minutes is 0.5 hours... so 15 minutes would be half of that, or 0.25 hours.)
7. Mr. Stonebraker drives 4.3 kilometers every morning to get to EA. On a slow day, this takes him about 15 minutes (0.25 hours). What is Mr. Stonebraker's speed in km/hr?