

Monday, October 6

Objective: I can find (and explain) rates

Warm up

1. What is $(3.5 \times 10^3) \times (4.2 \times 10^5) =$
 1.47×10^9

2. What is ~~45,689,102~~ correct to 3 significant digits?
~~45,689,102~~ $45,600,000$
 $45,700,000$

3. Write 0.0000509 in scientific notation
 5.09×10^{-5}

A rate is a comparison of quantities of different kinds

rate of pay (dollars per hour)

gas mileage (miles per gallon)

annual rainfall (inches per year)

unit cost (dollars per pound)

population density (people per square mile)

speed (miles per hour)

Speed

$$\text{average speed} = \frac{\textit{distance travelled}}{\textit{time taken}}$$

$$\text{time taken} = \frac{\textit{distance travelled}}{\textit{average speed}}$$

$$\text{Distance travelled} = \textit{average speed} \times \textit{time taken}$$

If you drive 150 miles in 2.5 hours, what is your average speed?

$$\text{speed} = \frac{150 \text{ miles}}{2.5 \text{ hrs}} = 60 \text{ mph}$$

If you travelled 300 miles at an average speed of 55 mph, how long would the trip take?

$$\text{time} = \frac{300}{55} = 5.5 \text{ hours}$$

If you drove 65 mph for 8 hours, how far would you travel?

$$\text{distance} = 65 \times 8 = 520 \text{ miles}$$

The trick with rates is to always divide the first unit by the second unit.

If apples **cost \$4.50** a pound and there are 6 apples in a **pound**

What is the **cost** $\dot{\div}$ **per apple**? $4.50 \div 6 = .75$

How many apples can you buy for \$1?

Assignment 2F.2: 1, 2, 4, 9