

NAME \_\_\_\_\_

**DIRECTIONS:** Solve each problem using dimensional analysis. Every number must have a unit. Conversion factors are given below.

Conversions Factors	
1 hr = 60 min	7 days = 1 week
24 hrs = 1 day	264.2 gal = 1 cubic meter
1 mi = 5,280 ft	20 drops = 1 mL
365 days = 1 year	1 L = 1000 mL
0.625 mi = 1.00 kM	1 L = 1000 cm <sup>3</sup>

1. How many miles will a person run during a 10 kilometer race?
2. The moon is 250,000 miles away. How many feet is it from earth?
3. A family pool holds 10,000 gallons of water. How many cubic meters is this?
4. The average Andrew student is in class 330 minutes/day. How many hours/day is this? How many seconds is this?
5. How many seconds are there in 1 year?
6. Lake Michigan holds  $1.3 \times 10^{15}$  gallons of water. How many liters is this?
7. Pepsi puts 355 ml of soda in a can. How many drops is this?
8. An odd shaped piece of metal is placed into a graduated cylinder containing 25.0 mL of water. The water level rises to 35.7 mL. The chunk of metal has a mass of 21.5 g. Calculate that density of the metal.
9. Change 60 miles/ hour to \_\_\_\_\_ft/sec (clue: both miles and hour must be change to other units)
10. What is the density of a block that has a length of 2.25 cm, a width of 0.50 cm, and a height of 2.55 cm is the block has a mass of 3.75 g?