WS 1.6 Dimensional Analysis (CONVERSIONS)

This may be the most important worksheet of the semester.

1 ft = 12 in
1 mi = 5280 ft
1 lb = 16 oz
1 gal = 4 qt
1 in = 2.54 cm
1 mi = 1.61 km
1 lb = 454 g
1 L = 1.057 qt
1 m = 100 cm
1 km = 1000 m
1 kg = 1000 g
1 L = 1000 mL
1 mL = 1 cm^3

<u>example A</u>: 29.5 in --> ft: $29.5\ \cancel{in} \times \frac{1\ ft}{12\ \cancel{in}} = 2.46\ ft$

<u>example B</u>: 0.036 m --> in: $0.036\ \cancel{m} \times \frac{100\ \cancel{cm}}{1\ \cancel{m}} \times \frac{1\ in}{2.54\ \cancel{cm}} = 1.4\ in$

1) 2.45 ft --> mi

2) 75.0 kg --> lb

3) 10.0 gal --> mL

4) 89 km --> in

<u>example C</u>: 5.17 lb/gal --> lb/qt:

<u>example D</u>: 3.4 mi/hr --> km/min

5) 459 ft/sec --> mi/hr

6) 2.40 g/mL --> lb/gal

7) 32.56 km/hr --> ft/hr

<u>example E:</u> 3.9 cm^3 --> ft^3

8) 5800 mi^2 --> km^2

9) 35.2 ft^2 --> cm^2

ANS (IRO+2): 0.000464 165 107,000 22.4 32,700 15,000 313 220. 3,500,000 20.0 37,800

UNITS (IRO+2): km^2 mL lb/gal mi ft/hr cm^2 in mi/hr lb kg lb/ft^3