

WS 1.9 review (side 2)

Use Dimensional Analysis to convert the following: (circle your answer)

26) 39 m → mi

$$39 \text{ m} \times \frac{1 \text{ km}}{1000 \text{ m}} \times \frac{1 \text{ mi}}{1.61 \text{ km}} = 0.024 \text{ mi}$$

27) 4.11 qt → mL

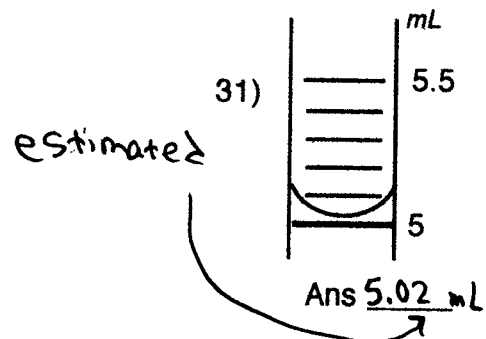
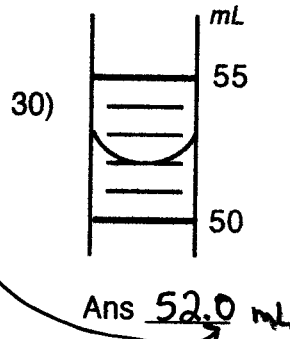
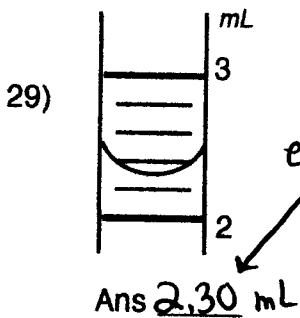
$$4.11 \text{ qt} \times \frac{0.946 \text{ L}}{1 \text{ qt}} \times \frac{1000 \text{ mL}}{1 \text{ L}} = 3890 \text{ mL}$$

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 qt = 0.946 L
1 m = 100 cm
1 km = 1000 m
1 kg = 1000 g
1 L = 1000 mL

28) 0.709 cm/sec → ft/day

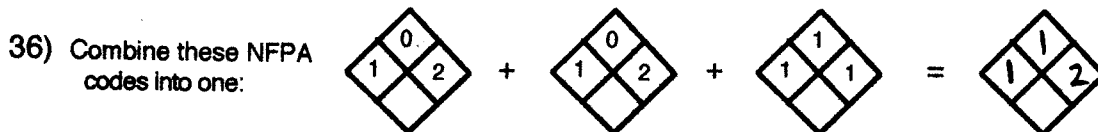
$$\frac{0.709 \text{ cm}}{1 \text{ sec}} \times \frac{1 \text{ in}}{2.54 \text{ cm}} \times \frac{1 \text{ ft}}{12 \text{ in}} \times \frac{60 \text{ sec}}{1 \text{ min}} \times \frac{60 \text{ min}}{1 \text{ hr}} \times \frac{24 \text{ hr}}{1 \text{ day}} = 2010 \text{ ft/day}$$

Read the following graduated cylinders:



For the following: Indicate whether is it a **D**eterminate or **I**ndeterminate error (Use "D" or "I"):

- 32) I Someone drank some of your experiment  
 33) D Your electronic balance is off by 0.4 grams  
 34) D You heated the chemicals to 90°C instead of 80°C because you miscopied the instructions  
 35) I A fly landed (and dissolved) in your highly acidic experiment



Ans (IRO+ 2): 6.1 x 10<sup>-11</sup>    0.000222    0.024    0.912    1    2    2.30    3    3    3    3    4    4  
 5    5.02    10    14.99    15    15.0    52.0    120    451    821.9    2010    3890    6.1 x 10<sup>3</sup>  
 23,000    30,000    31,000    31,000    31,010    95,600    97,800

Units (IRO+ 2): mm    m    mL    mL    mL    mL    mL    mL    mL    mL    L    L    g    g    g    cm  
 cm<sup>3</sup>    g/mL    ft/yr    oz    mi    mi