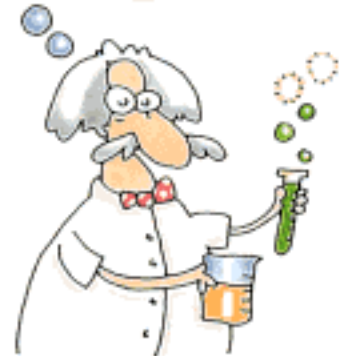


Unit 1 Review

3.45×10^{-2}



1. Convert Scientific notation to Expanded Notation
 - a) 3.8×10^{-3} ft = _____
 - b) 1.7×10^1 km = _____
 - c) 5.4×10^7 mL = _____
 - d) 3.6×10^{-9} g = _____

2. Convert Expanded Notation to Scientific Notation
 - a) 7,640,000 kg = _____
 - b) 0.0009340 cm = _____
 - c) 10 g = _____
 - d) 0.08 = _____

3. Fill in the following chart using your knowledge of the metric system

Full Name	Abbreviation	Value in base units
Ex: Decimeter	dm	1/10 meters
Kilometer	_____	_____
_____	mm	_____
centigram	_____	_____
_____	nm	_____
_____	_____	1/1000 gram
Megameter	_____	_____
_____	_____	1000 L
_____	Gm	_____
micrometer	_____	_____
_____	hm	_____
_____	_____	1/10 m
_____	_____	1,000,000,000 g

CONVERSIONS!

4. How many cm are in 0.00376 km? (Use your metric knowledge to get the ratio between cm and m and m and km!)

Answer: 376 cm

5. Knowing that 1 lb= 0.454 kg, determine how many grams are in 75 pounds.

Answer: 34,050 g

6. How many m^2 are there in 854 cm^2 ?

Answer: 0.0854 m^2

7. A doctor must administer some chemotherapy to a patient in the form of certain chloroxifin containing pills. The patient requires 3.5×10^{-3} mg of chloroxifin daily. If there are 2.75×10^{-4} mg chloroxifin in one pill, how many pills should the doctor give the patient each day?

Answer: 13 pills

8. You rent a car in Europe. Its tank holds 76.0 L of gasoline.
a. If in summer 2010, the price of gasoline in the Netherlands (Holland) is 1.33 Euros per liter, how many Euros will it cost you to fill the tank?

Answer: 101 Euros

Name: _____ Per _____

- b. If the exchange rate in summer of 2010 is 1 Euro= \$1.2878, how much would this cost you in dollars?

Answer: \$130

- c. If 1.00 gallon= 3.785 L, how many gallons fit in the tank?

Answer: 20.1 gallons

- d. What is the dollar cost of a gallon of gas in the Netherlands?
Hint: Divide the answer to (b) by the answer to (c), and don't do a conversion!

Answer: \$6. 51 per gallon

DENSITY

9. Calculate the density of a substance that weighs 35.00 g and has a volume of 12.3 mL.

Answer: 2.85 g/mL

10. What is the mass of an object with a density of 3.7 g/cm³ and a volume of 1.3 mL?
Hint: 1 cm³=1 mL

Answer: 4.81 g

Name: _____ Per _____

11. What is the volume of 27 g of mercury ($d=13.5 \text{ g/mL}$)?

Answer: 2.0 mL

12. Use the concept of density to explain why balloons filled with Helium (He) float in air, where as a balloon that you fill with air will sink?

13. According to the following chart, which other gas, besides He, could be used to fill balloons that will float? Circle all of the gases that will allow a balloon to float.

Gas	Density (g/mL)
Air (a mixture)	0.00128
He (helium)	0.00018
H ₂ (Hydrogen)	0.000089
CH ₄ (methane)	0.00717
O ₂ (Oxygen)	0.00133
CO ₂ (Carbon dioxide)	0.001977
NH ₃ (Ammonia)	0.00077

SIGNIFICANT FIGURES

14. How many significant figures are in the following?

- | | | | | | |
|---|-----------|-------|---|------------------------|-------|
| a | 0.0039 | _____ | f | 8.93×10^3 | _____ |
| b | 4,801 | _____ | g | 8.930×10^{-3} | _____ |
| c | 5,000,000 | _____ | h | 1.0×10^{10} | _____ |
| d | 5,000,100 | _____ | i | 8.9030 | _____ |
| e | 5.10000 | _____ | j | 100. | _____ |

15. Calculate these problems, and express the answer to the correct number of sig figs.

a. $4000. \times 0.1930 =$

b. $5.40 / 0.009 =$

c. $9.4005 - 1.456$

d. $430. \times .0100 + 1.239 =$

e. $(0.0030 / 1.0 \times 10^3) / (.0089 + 1.0134) =$

TEMPERATURE & MEASUREMENT

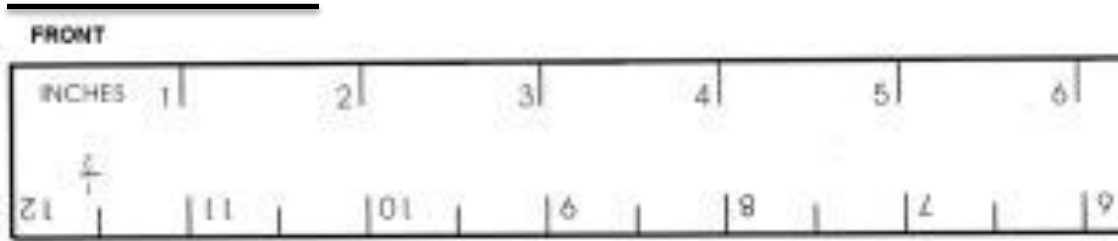
16. Convert the following temperatures.

	Fahrenheit (F)	Celsius (C)	Kelvin (K)
a		32	
b	98		
c			373
d		100	
e	15		
f			

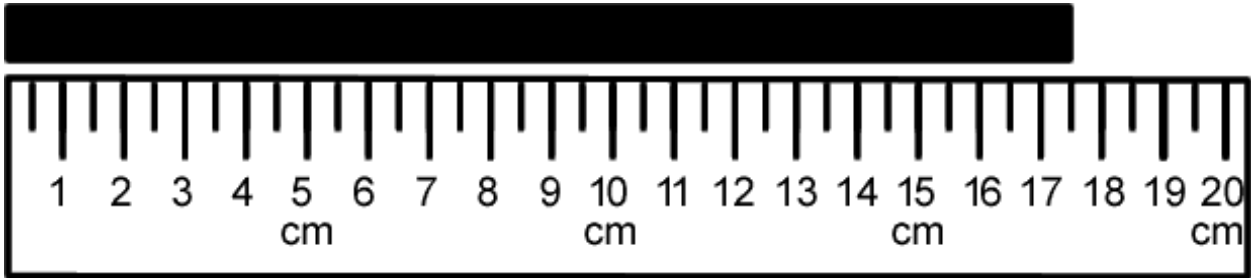
Name: _____ Per _____

17. Complete the following measurements to the correct number of places. Remember to include the measurement of uncertainty.

Increment: _____ Value _____



Increment: _____ Value _____



Increment: _____ Value _____

