Name: _____ **Review 8 week Test** **Date:** _____ **Period:** ____

KEY

A. Match the SI units

1. Length D
2. Time B
3. Mass C
4. Temperature A
5. Amount of substance E

a. Kelvin
b. Second
c. Kilogram
d. Meter
e. mol

B. Metric Conversions: Convert the following using dimensional analysis. Show your work!

6. 2000 mg = 2 g
Equality(ies) needed:

$$2000\text{mg} \left| \frac{1\ \text{g}}{1000\ \text{mg}} \right.$$

7. 5.6 kL = 5,600,000 mL
Equality(ies) needed:

$$5.6\text{kL} \left| \frac{1000\ \text{L}}{1\ \text{kL}} \right| \frac{1000\text{ml}}{1\ \text{L}}$$

8. 104 km = 104,000 m
Equality(ies) needed:

$$104\text{km} \left| \frac{1000\ \text{m}}{1\ \text{km}} \right. = 104{,}000\ \text{m}$$

9. 0.5 kg = 50,000 cg
Equality(ies) needed:

$$.5\text{kg} \left| \frac{1000\ \text{g}}{1\ \text{kg}} \right| \frac{100\ \text{cg}}{1\ \text{g}}$$

C. Density Calculations: Show your work! Include units in every step

10. What is the volume of tank that can hold 2015 g of methanol whose density is 0.788g/mL?

$D = \frac{m}{V}$

$\frac{.788}{1} = \frac{2015}{x}$ (235F)

$.788x = 2015$

$\frac{.788x}{.788} = \frac{2015}{.788}$

$x =$

$V = 2{,}560\text{ml}$

m / V | D

11. What is the density of a board whose dimensions are 5.54cm x 10.6cm x 199cm and whose mass is 2860g?

$V = \text{length} \times \text{width} \times \text{height}$

$V = 11{,}686.076$

$D = \frac{m}{V}$ $D = \frac{2860}{11{,}686.076}$ $D = .245\ \text{g/cm}^3$

12. A loaf of bread has a volume of 2270cm³ and a mass of 454g. What is the density of the bread?

$D = \frac{m}{V}$

$\frac{454\text{g}}{2270\text{cm}^3}$

$.200\text{g/cm}^3$

13. A block of wood has a density of 0.6g/cm³ and a volume of 1.2cm³. What is the mass of the block of wood?

$D = \frac{m}{V}$

$.6 = \frac{x}{1.2\text{cm}^3}$

.72g

.7g

H. Accuracy and Precision

A sample of copper has an actual mass of 5.25 g. Three different students measured the copper and obtained the following results:

John: 5.36 g, 5.34 g, 5.34 g .02 difference

Accurate data → **Britney**: 5.20 g, 5.28 g, 5.24 g .08 diff

Victor: 5.3 g, 5.2 g, 5.0 g .3 diff

38. Who made the most **accurate** measurements: Britney, closest to 5.25g

39. Who made the most **precise** measurements: John, his measurements closest together.

40. Who used the least precise instrument and why?
Victor, his measurements were only to 10th place

41. Circle the estimated digits in Britney's measurements.
↳ Estimated digit is last digit in a number

Match the Scientist with the discovery

42. Proposed the first modern atomic theory, including the billiard ball or solid, indivisible model of the atom C	a. Democritus
43. Criticized the idea of empty space B	b. Aristotle
44. Developed the earliest known ideas of the atom, small and indivisible, moving around in empty space A	c. John Dalton
45. Discovered the electron using the cathode ray tube, and proposed the plum pudding model D	d. J.J. Thompson
46. Famous for the gold foil experiment which identified the central nucleus and confirmed a concept of empty space within the atom; named the proton E	e. Ernest Rutherford
47. Found electrons are in orbitals F	f. Niels Bohr
48. Formed the periodic table based on atomic masses H	g. Henry Moseley
49. Reorganized the periodic table by the number of protons (atomic number) G	h. Dmitri Mendeleev

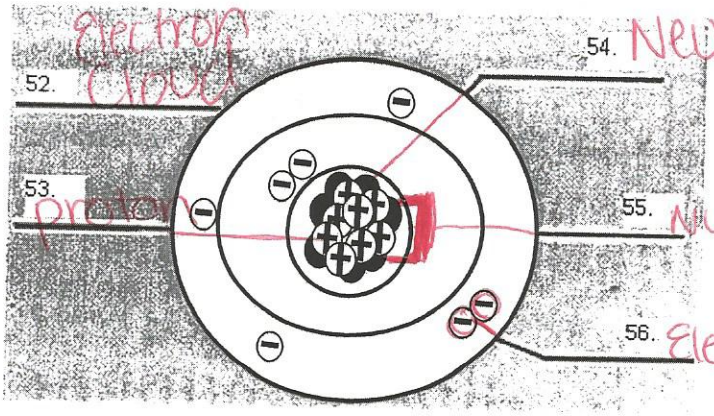
50. Mendeleev represented undiscovered elements on the periodic table with _____.

a. atomic numbers b. red letters c. circles (d.) blank spaces

Fill in the chart

Element	Energy Level	# Valence Electrons	Metal / Non-metal	Family
EXAMPLE: Sodium	3	1	Metal	Alkali Metals
67. Strontium	5	2	Metal	Alkaline Earth Metal
68. Mercury	6	XXXXXXXXXXXXX	Metal	Transition Metal
69. Boron	2	3	metalloid	Metalloid
70. Astatine			metalloid	Metalloid
71. Xenon	5	8	Nonmetal	Noble Gas
72. Francium	7	1	Metal	Alkali Metal

Label the atom with words from the bank.



~~Proton~~ ~~Nucleus~~
~~Electron~~ ~~Electron Cloud~~
~~Neutron~~

Match the Group/ Family with the property

E 73. Most reactive non-metals
A 74. Most reactive metals
C 75. Normally found as ore
D 76. Has properties of metals and non-metals
F 77. Non-reactive non-metals
B 78. Relatively reactive metals

~~a. Alkali Metals~~
~~b. Alkaline Earth Metals~~
~~c. Transition Metals~~
~~d. Metalloids~~
~~e. Halogens~~
~~f. Noble Gases~~

Match the following

A 79. Identifies the element
E 80. Contains the atom's mass
D 81. Located in the outer shell
C 82. Forms Ions when # is changed
B 83. Forms Isotopes when # is changed

~~a. Protons~~
~~b. Neutrons~~
~~c. Electrons~~
~~d. Valence electrons~~
~~e. Nucleus~~