Chemistry Review

1. Match the following definitions with the terms from the word list to the right.

e	Anything that occupies space.	(a) atom
b	A pure substance that can be broken down by chemical changes.	(b) compound
f	Two or more substances that are together and can be separated by physical changes.	(c) heterogeneous mixture
d	A mixture that is the same throughout.	(d) homogeneous mixture
c	A mixture with visible components.	(e) matter
a	The smallest particle of an element that has the properties of that element.	(f) mixture
g	Two or more atoms joined together by chemical bonds.	(g) molecule

2. Indicate if each of the following is a homogeneous mixture, heterogeneous mixture, compound, or element.

(a) Popsicle homogeneous mixture

(b) Chili heterogeneous mixture

(c) Oxygen element

(d) Water compound

(e) Milk homogeneous mixture

(f) Sugar compound

(g) Nitrogen element

(h) Gasoline compound / homogeneous mixture

(i) Vinegar compound

3. Differentiate between physical and chemical properties.

physical - a characteristic that does not change the identity of the substance

Chemical - ability to react to form new substances.

4. Indicate if each of these is a physical or chemical property.

(a) Boiling point physical

(b) Acidity chemical

(c) Ability to rust chemical

(d) Melting point physical

(e) Color physical

(f) Flammability chemical

(g) Density physical

5. Differentiate between physical and chemical changes.

physical change - a change in state or appearance that does not change the substance.

Chemical change - a change that results in the production of a new substance.

6. How do you know a chemical change is occurring or has occurred?

- color change
- temperature change
- precipitate formed
- production of a gas
- production of light

7. Indicate if each of the following is a physical or chemical change.

(a) A hot dog is cooked chemical

(b) Water is boiled to make pasta physical

(c) Old ham goes bad in the refrigerator chemical

(d) A rock star gets a tattoo on his forehead physical

(e) Paper is burned chemical

(f) Sanding a piece of wood physical

(g) melting butter physical

(h) blowing up a balloon physical

(i) salt dissolving physical

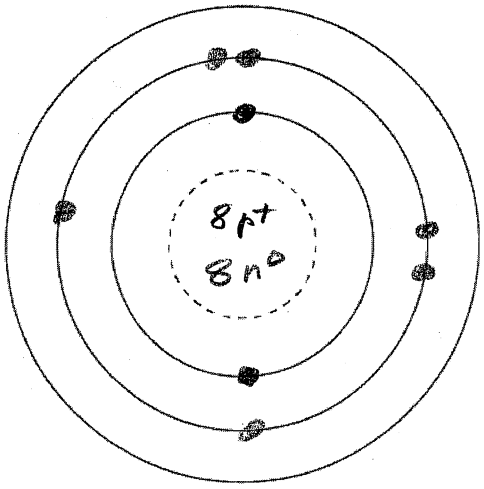
(j) colors fading in the sunshine physical

8. Complete the following charge about the particles inside an atom.

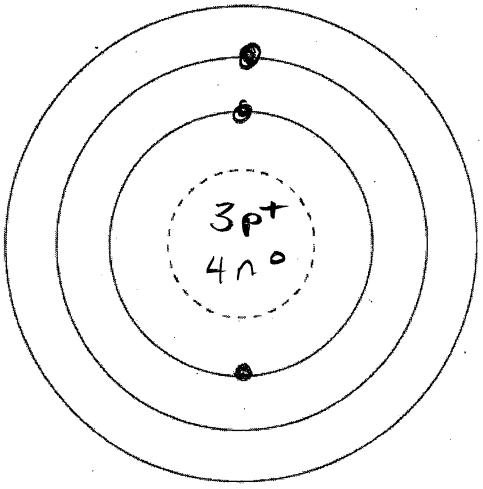
Particle	Symbol	Charge	Location
proton	p^+	positive	nucleus
neutron	n^0	neutral	nucleus
electron	e^-	negative	clouds surrounding nucleus

9. Draw Bohr diagrams for each of the following elements.

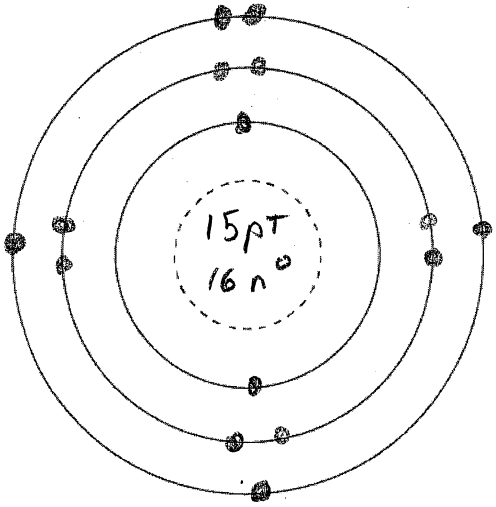
(a) Oxygen



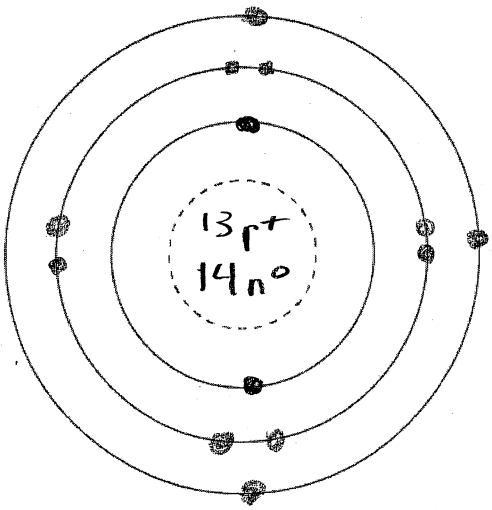
(b) Lithium



(c) Sulfur



(d) Aluminum



10. Complete the following chart of element names and symbols.

Element Name	Element Symbol
Carbon	C
nitrogen	N
Calcium	Ca
gold	Au
Chlorine	Cl
copper	Cu
Silver	Ag
beryllium	Be
Tin	Sn
magnesium	Mg

11. List the elements and the number of each element in each of the following compounds.

(a) H_2SO_4

2 - hydrogen
1 - sulfur
4 - oxygen

(b) NH_3NO_3

2 - nitrogen
3 - hydrogen
3 - oxygen

(c) $CuSO_4$

1-Copper
1-Sulfur
4-oxygen

(d) $Mg(OH)_2$

1-magnesium
2-oxygen
2-hydrogen

12. Differentiate between the groups or families on the periodic table and the periods.

groups/families are the columns
periods are the rows

13. Where are the nonmetals located on the periodic table?

right at the "staircase"

14. List the properties of metals.

- shiny
- malleable and ductile
- good conductors of heat and electricity

15. List the properties of nonmetals.

- dull
- brittle
- poor conductors of heat and electricity.

16. What is a metalloid?

- an element that has properties of both metals and nonmetals.

17. Indicate if each of the following elements is a metal or a nonmetal.

(a) Sodium metal

(b) Oxygen nonmetal

(c) Calcium metal

(d) Helium nonmetal

(e) Cl nonmetal

(f) Ar nonmetal

(g) Li metal

(h) Cu metal

18. Indicate the group or family that each of the following elements is in.

(a) Magnesium alkaline earth metal

(b) Bromine halogen

(c) Krypton noble gas

(d) Sulfur chalcogen

(e) Potassium alkali metals

(f) Manganese transition metals