

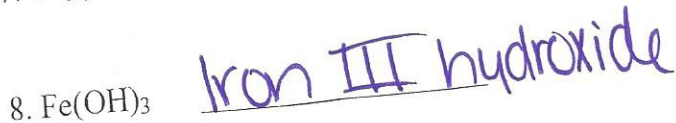
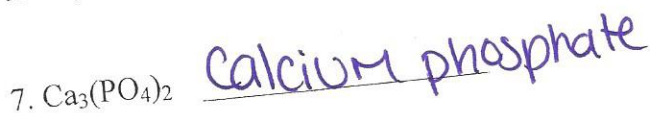
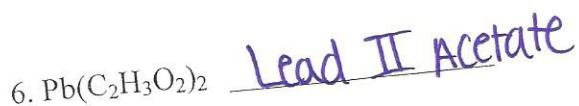
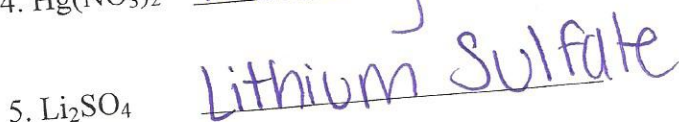
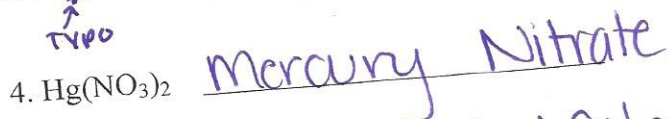
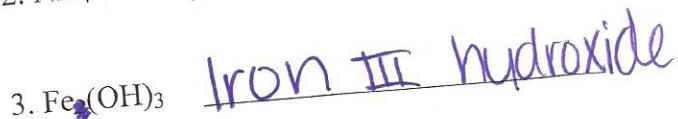
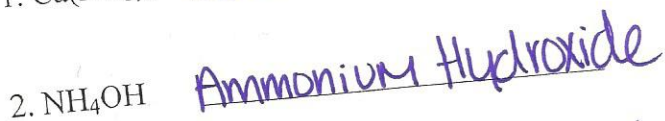
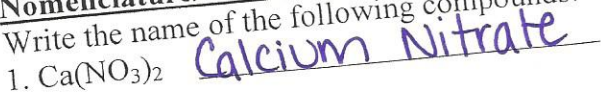
# Review Sheet 3<sup>rd</sup> 9 week Test

Name \_\_\_\_\_

Period \_\_\_\_\_

## Nomenclature/Formula Writing (6 on test)

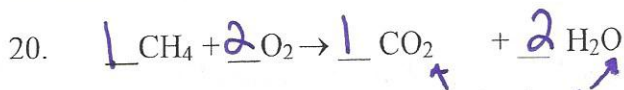
Write the name of the following compounds:



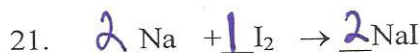
Find the charge of each ion in these compounds. Then, write the formula for these compounds:

	Charge of + ion	Charge of - ion	Compound's proper formula
Example: zinc chlorate	$\text{Zn}^{+2}$	$\text{ClO}_3^{-1}$	$\text{Zn}(\text{ClO}_3)_2$
11) cesium hydroxide	$\text{Cs}^{+1}$	$\text{OH}^{-1}$	$\text{CsOH}$
12) barium hydroxide	$\text{Ba}^{+2}$	$\text{OH}^{-1}$	$\text{Ba}(\text{OH})_2$
13) tin II sulfide	$\text{Sn}^{+2}$	$\text{S}^{-2}$	$\text{SnS}$
14) iron III sulfate	$\text{Fe}^{+3}$	$\text{SO}_4^{-2}$	$\text{Fe}_2(\text{SO}_4)_3$
15) Calcium nitrate	$\text{Ca}^{+2}$	$\text{NO}_3^{-1}$	$\text{Ca}(\text{NO}_3)_2$
16) iron III hydroxide	$\text{Fe}^{+3}$	$\text{OH}^{-1}$	$\text{Fe}(\text{OH})_3$
17) beryllium sulfite	$\text{Be}^{+2}$	$\text{SO}_3^{-2}$	$\text{BeSO}_3$
18) Lead IV sulfide	$\text{Pb}^{+4}$	$\text{S}^{-2}$	$\text{PbS}_2$
19) silver chloride	$\text{Ag}^{+1}$	$\text{Cl}^{-1}$	$\text{AgCl}$

## Balancing Equations/Law of conservation of mass (5 balancing and 3 types of Reactions on test)



Combustion



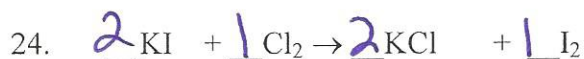
Synthesis



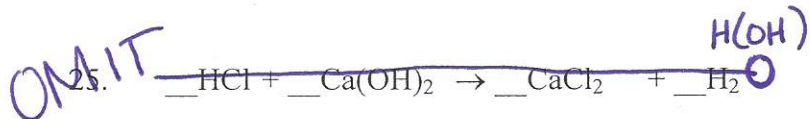
Synthesis



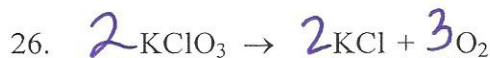
Synthesis



Single

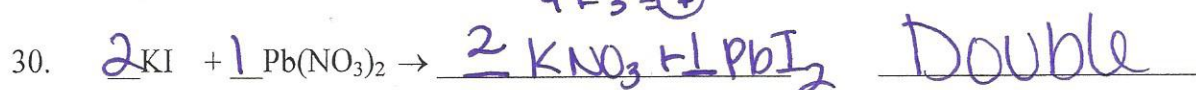
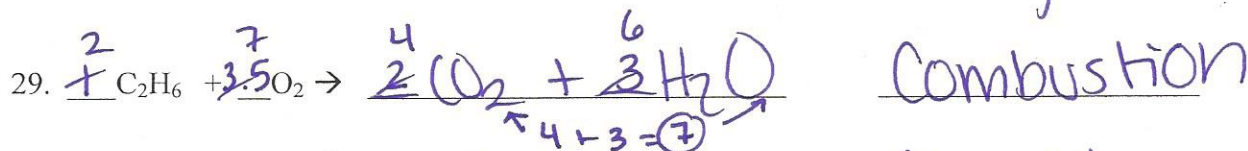
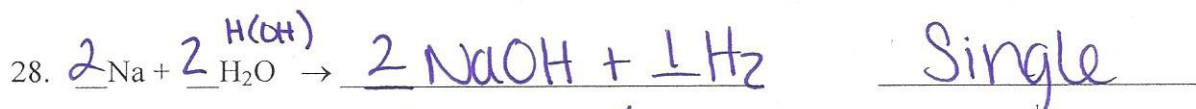
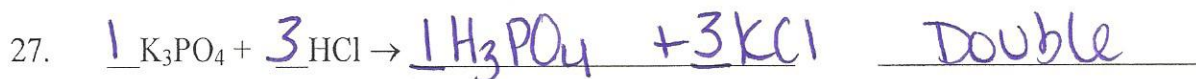


Double



Decomposition

**Predict the products, balance the equation, and tell type of reaction:**



**Stoichiometry (6 on test). SHOW YOUR WORK.**



a. How many moles of Iron III oxide are produced from 6.2 moles of iron?

$$\frac{6.2 \text{ mole Fe}}{4 \text{ mole Fe}} \times \frac{2 \text{ mole Fe}_2\text{O}_3}{4 \text{ mole Fe}} = 3.1 \text{ mole Fe}_2\text{O}_3$$

b. How many grams of product are formed if you have 20 moles of iron with excess oxygen?

$$\frac{20 \text{ mole Fe}}{4 \text{ mole Fe}} \times \frac{2 \text{ mole Fe}_2\text{O}_3}{4 \text{ mole Fe}} \times \frac{159.8 \text{ g Fe}_2\text{O}_3}{1 \text{ mole Fe}_2\text{O}_3} = 1598 \text{ g Fe}_2\text{O}_3$$

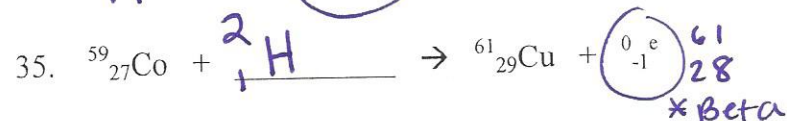
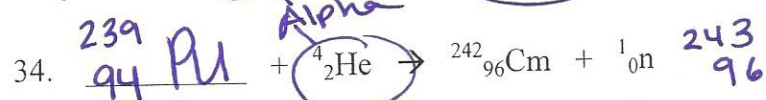
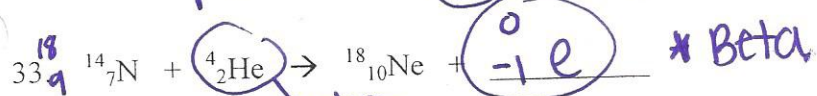
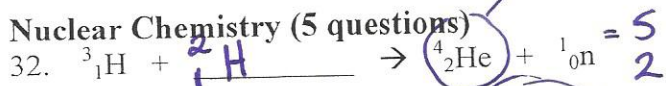
c. How many moles ~~grams~~ of Oxygen are needed to form 29 grams of Iron III oxide?

$$\frac{29 \text{ g Fe}_2\text{O}_3}{159.6 \text{ g Fe}_2\text{O}_3} \times \frac{1 \text{ mole Fe}_2\text{O}_3}{159.6 \text{ g Fe}_2\text{O}_3} \times \frac{3 \text{ mole O}_2}{2 \text{ mole Fe}_2\text{O}_3} = 0.272 \text{ mole O}_2$$

d. How many grams of product can be made from 57 grams of oxygen with excess iron?

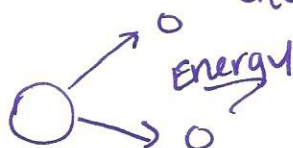
$$\frac{57 \text{ g O}_2}{32 \text{ g O}_2} \times \frac{1 \text{ mole O}_2}{32 \text{ g O}_2} \times \frac{2 \text{ mole Fe}_2\text{O}_3}{3 \text{ mole O}_2} \times \frac{159.8 \text{ g Fe}_2\text{O}_3}{1 \text{ mole Fe}_2\text{O}_3} = 189.7 \text{ g Fe}_2\text{O}_3$$

# Nuclear Chemistry (5 questions)



36. What is the difference between fission and fusion? **DRAW PICTURES!!!**

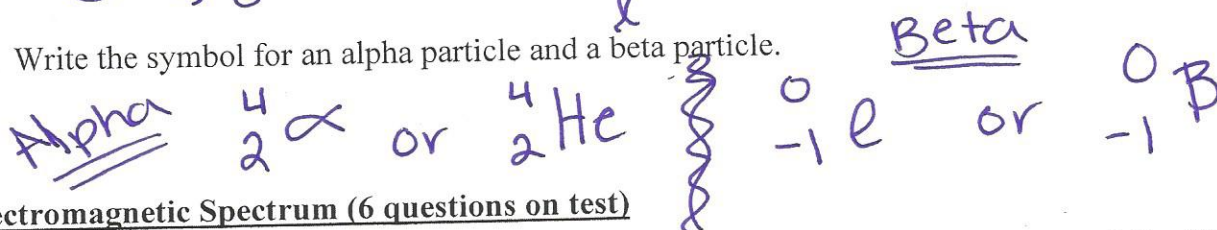
**Fission** - Atom splits creating energy



**FUSION** - 2 Atoms nuclei fuse (join)



37. Write the symbol for an alpha particle and a beta particle.



## Electromagnetic Spectrum (6 questions on test)

$E = hf$  energy of a photon = (Planck's constant)(frequency)  $h$  = Planck's constant =  $6.63 \times 10^{-34} \text{ J s}$

$c = \lambda f$  Speed of light = (wavelength)(frequency)  $c$  = speed of light =  $3.00 \times 10^8 \text{ m/s}$

$E = \frac{hc}{\lambda}$  energy of a photon =  $\frac{(\text{Planck's constant})(\text{speed of light})}{\text{wavelength}}$

## SHOW YOUR WORK.

38. Calculate the wavelength of violet light with a frequency of  $820 \times 10^{12} \text{ Hz}$ .

$$c = \lambda f$$

$$3 \times 10^8 = \lambda (820 \times 10^{12})$$

$$\lambda = 3.65 \times 10^{-7} \text{ m}$$

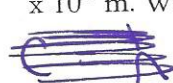
39. The ultraviolet rays have a wavelength of approximately 320 nanometers ( $3.2 \times 10^{-7} \text{ m}$ ). What is the frequency of a UV-B ray?

$$c = \lambda \cdot f$$

$$3 \times 10^8 = 3.2 \times 10^{-7} (f)$$

$$f = 9.375 \times 10^{14} \text{ Hz}$$

40. One of the electron transitions in a hydrogen atom produces infrared light with a wavelength of  $8.464 \times 10^{-6} \text{ m}$ . What amount of energy causes this transition?



$$E = \frac{h \cdot c}{\lambda}$$

$$E = \frac{6.63 \times 10^{-34} (3 \times 10^8)}{8.464 \times 10^{-6}}$$

$$E = 2.34 \times 10^{-20} \text{ J}$$

### Molar Mass (2 questions)

41. Write the formula for these compounds, THEN calculate their molar mass. (Show work.)

- a. Barium phosphate formula:  $\text{Ba}_3(\text{PO}_4)_2$  mass:  $604 \text{ g.}$   
Ba 3(138)  
P 2(31)  
O 8(16) = 604
- b. Calcium phosphide formula:  $\text{Ca}_3\text{P}_2$  mass:  $182 \text{ g.}$   
Ca 3(40)  
P 2(31)
- c. aluminum phosphate formula:  $\text{AlPO}_4$  mass:  $215 \text{ g.}$   
Al 27  
P 4(31)  
O 4(16)
- d. aluminum phosphide formula:  $\text{AlP}$  mass:  $58 \text{ g.}$   
Al 27  
P 31

### Lewis Dot (1 questions)

42. Draw the Lewis dot structure for :

a. Potassium  $\text{K}^\bullet$

b. Strontium  $\text{Sr}^\bullet$

c. Chlorine  $:\ddot{\text{Cl}}^\bullet$

d. nitrogen  $:\ddot{\text{N}}^\bullet$

e. sulfur  $:\ddot{\text{S}}^\bullet$

f. argon  $:\ddot{\text{Ar}}:$