

Activity 12 - Balancing Chemical Equations

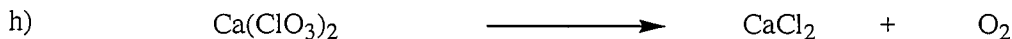
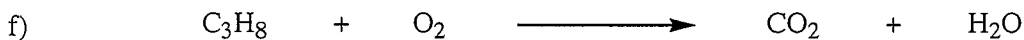
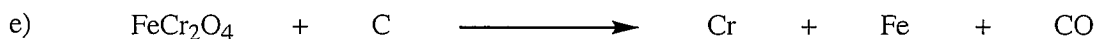
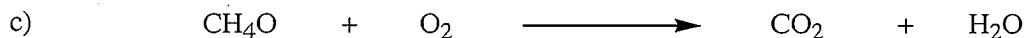
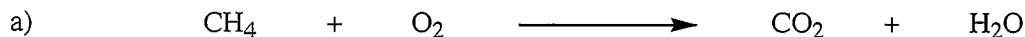
Name Key
Section _____ Date _____

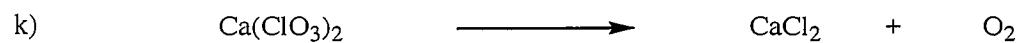
Tips for Writing Chemical Equations:

- Make certain all formulas are correct.
- Once all formulas are written correctly one may **not change the subscripts**, only the coefficients in order to balance the equation. Always choose the lowest whole number coefficients.
- The symbols (s), (l), and (g) indicate the phase of each reactant or product: solid, liquid and gas, respectively.
- Some elements exist in nature as diatomic molecules. The element names correspond to the diatomic formula because this is the elemental structure. These elements include **hydrogen**, oxygen, fluorine, bromine, iodine, nitrogen, and chlorine. The correct formula for the elemental name is diatomic not atomic. A mnemonic device that may help you remember these elements is the name $\text{H}_2\text{O}_2\text{F}_2\text{Br}_2\text{I}_2\text{N}_2\text{Cl}_2$, "Hofbrincl". $\text{H}_2 \text{ O}_2 \text{ F}_2 \text{ Br}_2 \text{ I}_2 \text{ N}_2 \text{ Cl}_2$

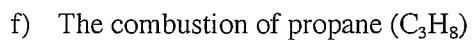
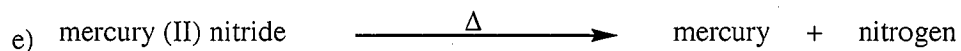
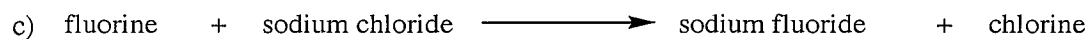
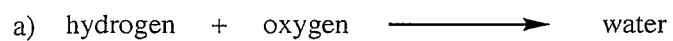
Questions and Problems

1. Balance the following chemical equations:





2. Write a chemical equation for the following reactions:

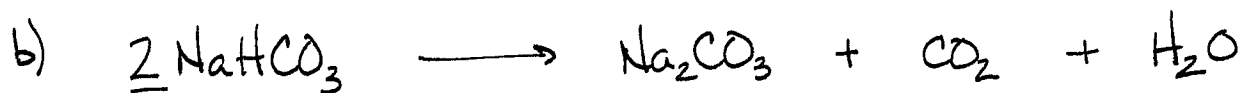


Activity 12 - Balancing Chemical Equations



C 1
H 4
O ~~2~~ 4

C 1
H ~~2~~ 4
O ~~2~~ 4



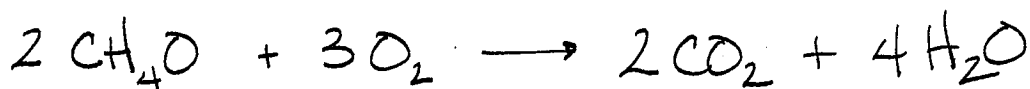
Na ~~1~~ 2
H ~~1~~ 2
C ~~1~~ 2
O ~~3~~ 6

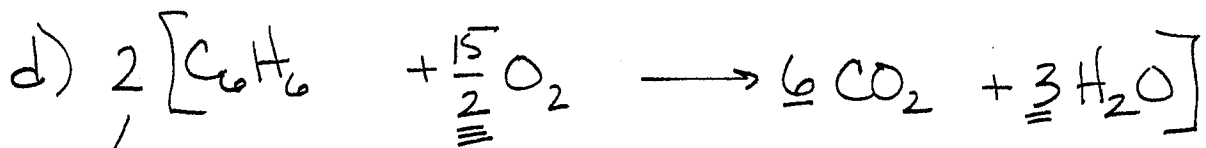
Na 2
H 2
C 2
O ~~3~~ 6



C 1
H 4
O ~~3~~ 4

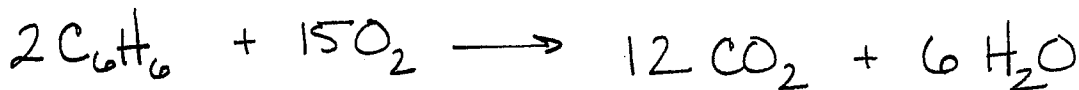
C 1
H ~~2~~ 4
O ~~3~~ 4





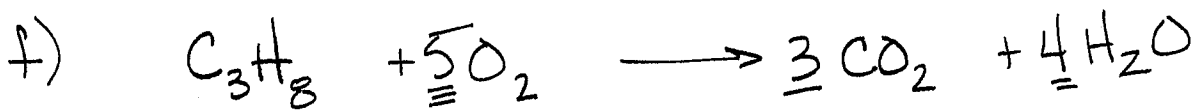
C 6
H 6
O 2 15

C x 6
H 2 6
O 3 15



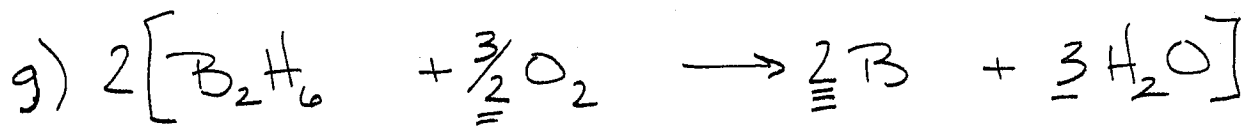
Fe 1
Cr 2
O 4
C x 4

Fe 1
Cr x 2
O x 4
C x 4



C 3
H 8
O 2 10

C x 3
H 2 8
O 3 10



B 2

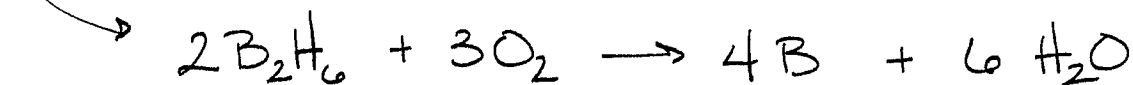
H 6

O 3

B x 2

H x 6

O x 3



Ca 1

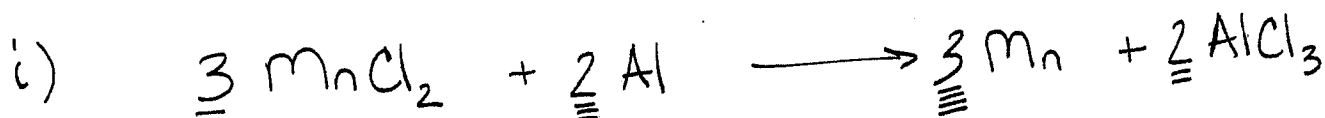
Cl 2

O 6

Ca 1

Cl 2

O x 6



Mn x 3

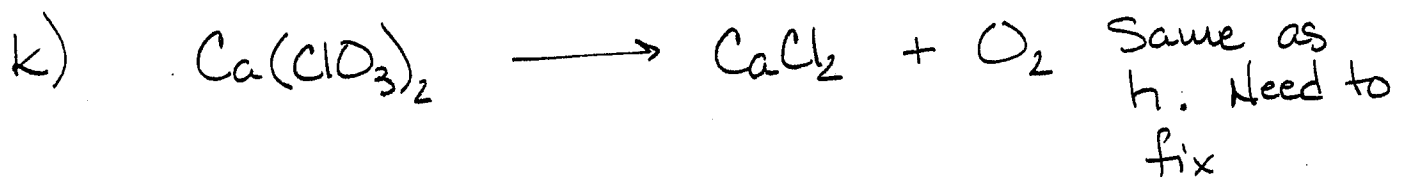
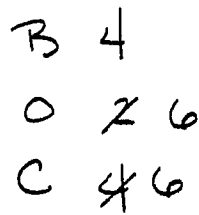
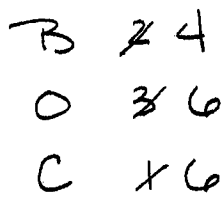
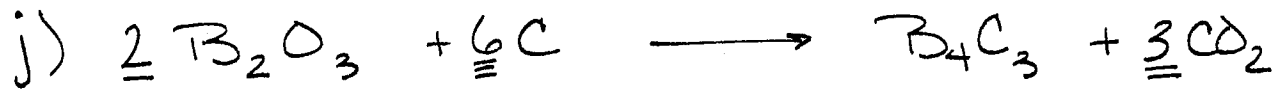
Cl x 6

Al x 2

Mn x 3

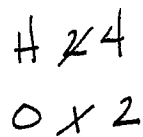
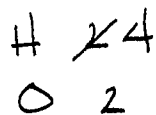
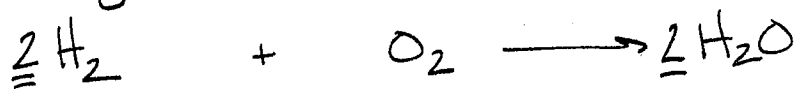
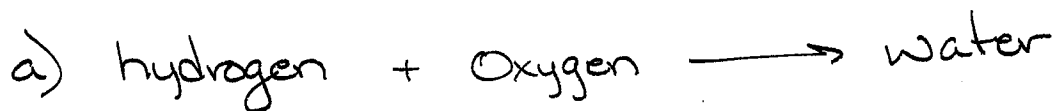
Cl x 6

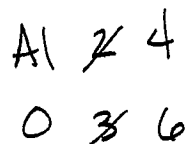
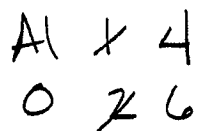
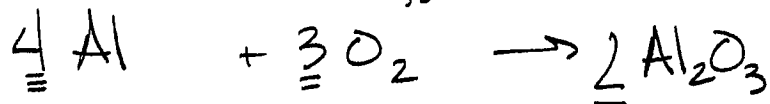
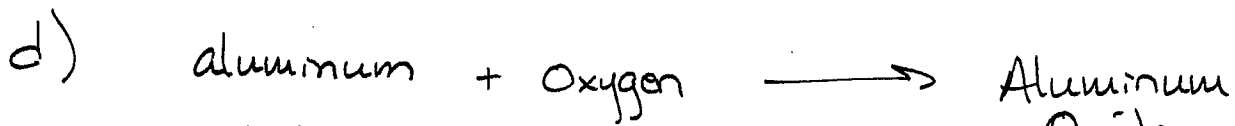
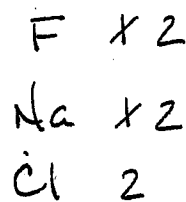
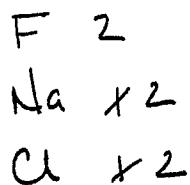
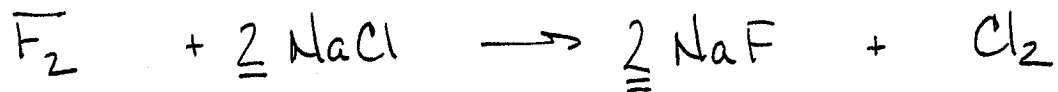
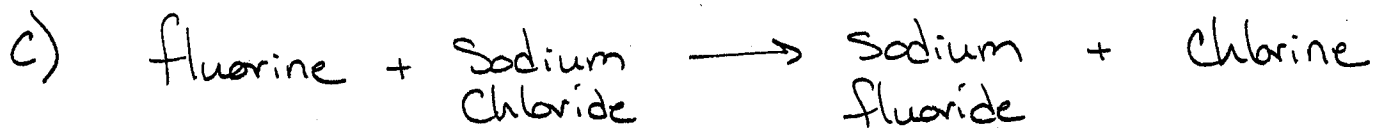
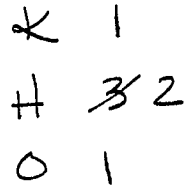
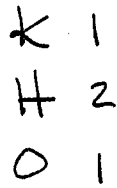
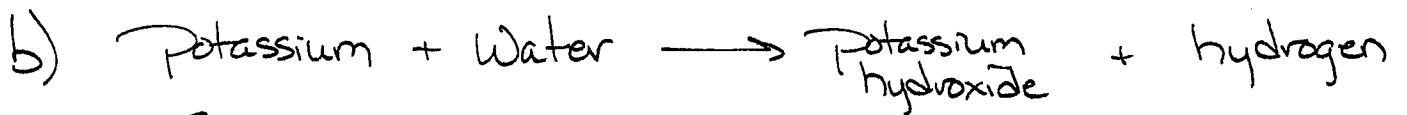
Al x 2



2. Write a chemical equation for the following reactions:

* Remember here that some of the elements are diatomic HOFBrINCl





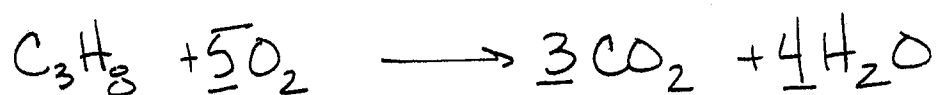
e) Mercury(II) Nitride $\xrightarrow{\Delta}$ Mercury + Nitrogen



Hg 3
N 2

Hg $\times 3$
N 2

f) The combustion of propane (C_3H_8)



C 3

H 8

O $\neq 10$

C $\times 3$

H $\neq 8$

O $\neq 10$