Balancing Equations (2)

____(1) Which equation shows a conservation of mass?

A) $Na + Cl_2 \rightarrow NaCl$

B) $Al + Br_2 \rightarrow AlBr_3$

C) $H_2O \rightarrow H_2 + O_2$

D) $PCl_5 \rightarrow PCl_3 + Cl_2$

____(2) Given the balanced equation with an unknown compound represented by *X*:

$$C_6H_{12}O_6(aq) \xrightarrow{\text{enzyme}} 2X + 2CO_2(g)$$

Which compound is represented by *X*?

A) $CH_3OH(aq)$
B) $CH_2(OH)_4(aq)$
C) $CH_3CH_2OH(aq)$
D) $CH_2OHCH_2OH(aq)$

____(3) Given the unbalanced equation:

$$\_\_Mg(ClO_3)_2(s) \rightarrow \_\_MgCl_2(s) + \_\_O_2(g)$$

What is the coefficient of O_2 when the equation is balanced correctly using the *smallest* whole number coefficients?

A) 1
B) 2
C) 3
D) 4

____(4) Which equation is correctly balanced?

A) $H_2 + O_2 \rightarrow H_2O$
B) $Ca + Cl_2 \rightarrow CaCl$
C) $2\ H_2 + O_2 \rightarrow 2\ H_2O$
D) $Ca + C1_2 \rightarrow Ca_2Cl$

____(5) Given the unbalanced equation:

$$\_\_\ Al(s) + \_\_O_2(g) \rightarrow \_\_Al_2O_3(s)$$

When this equation is correctly balanced using smallest whole numbers, what is the coefficient of $O_2(g)$?

A) 6
B) 2
C) 3
D) 4

____(6) Given the unbalanced equation:

$$\_\_Na + \_\_H_2O \rightarrow \_\_H_2 + \_\_NaOH$$

When the equation is correctly balanced using the smallest whole-number coefficients, the coefficient for H_2O is

A) 1
B) 2
C) 3
D) 4

____(7) Given the unbalanced equation:

$$\_\_CaSO_4 + \_\_AlCl_3 \rightarrow Al_2(SO_4)_3 + \_\_CaCl_2$$

What is the coefficient of $Al_2(SO_4)_3$ when the equation is completely balanced using the smallest whole-number coefficients?

A) 1
B) 2
C) 3
D) 4

____(8) When the equation

$$\_\_\ Cu + \_\_H_2SO_4 \rightarrow \_\_CuSO_4 + \_\_H_2O + \_\_SO_2$$

is correctly balanced, what is the coefficient of $CuSO_4$?

A) 1
B) 2
C) 3
D) 4

____(9) When the equation

$$\_\_Al_2(SO_4)_3 + \_\_ZnCl_2 \rightarrow \_\_AlCl_3 + \_\_ZnSO_4$$

is correctly balanced using the smallest whole number coefficients, the sum of the coefficients is

A) 9
B) 8
C) 5
D) 4

____(10) When the equation

$$\_\_SiO_2 + \_\_C \rightarrow \_\_SiC + \_\_CO$$

is correctly balanced using whole-number coefficients, the sum of all the coefficients is

A) 6
B) 7
C) 8
D) 9

____(11) Given the unbalanced equation:

$$\_\_Ca(OH)_2 + \_\_(NH_4)_2SO_4 \rightarrow \_\_CaSO_4 + \_\_NH_3 + \_\_H_2O$$

What is the sum of the coefficients when the equation is completely balanced using the smallest whole number coefficients?

A) 5
B) 7
C) 9
D) 11

____(12) When the equation

$$\_\_Ca(ClO_3)_2 \rightarrow \_\_CaCl_2 + \_\_O_2$$

is correctly balanced, the coefficient in front of the O_2 will be

A) 1
B) 2
C) 3
D) 4

Balancing Equations

(2)

____(13) Given the incomplete equation:

$2\ N_2O_5(g) \rightarrow$

Which set of products completes and balances the incomplete equation?

A) $2\ N_2(g) + 3\ H_2(g)$
B) $2\ N_2(g) + 2\ O_2(g)$
C) $4\ NO_2(g) + O_2(g)$
D) $4\ NO(g) + SO_2(g)$