

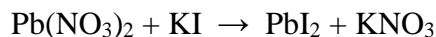
## 8th Grade Science – Week 26

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Questions 1-2 refer to one of four answers shown below.

- (A) Combination
- (B) Decomposition
- (C) Single Replacement
- (D) Double Replacement

1. What is the type of reaction for the following:  $\text{Zn} + \text{CuCl}_2 \rightarrow \text{Cu} + \text{ZnCl}_2$
2. What is the type of reaction for the following:  $2 \text{Na} + \text{O}_2 \rightarrow 2 \text{NaCl}$



3. Given the chemical equation above, what are the coefficients when it is completely balanced?
  - (A) 1, 2, 2, 1
  - (B) 1, 3, 1, 3
  - (C) 1, 2, 1, 2
  - (D) 1, 3, 3, 1
4. What is the molar mass for potassium carbonate,  $\text{K}_2\text{CO}_3$ ?
  - (A) 16 g/mol
  - (B) 24 g/mol
  - (C) 32 g/mol
  - (D) 40 g/mol
5. What is the molar mass of  $\text{Mg}_3(\text{PO}_4)_2$ ?
  - (A) 113 g/mol
  - (B) 121 g/mol
  - (C) 167 g/mol
  - (D) 262 g/mol
6. What is the mass of 2.5 moles of  $\text{O}_2$ ?
  - (A) 80 g
  - (B) 60 g
  - (C) 40 g
  - (D) 20 g
7. How many moles are there in 4 grams of propane,  $\text{C}_3\text{H}_8$ ?
  - (A) 1.00 moles
  - (B) 0.50 moles
  - (C) 0.25 moles
  - (D) 0.10 moles
8. What is the total number of atoms in 2.00 moles of iron?
  - (A) 63.5 atoms
  - (B)  $3.0 \times 10^{23}$  atoms
  - (C)  $6.0 \times 10^{23}$  atoms
  - (D)  $1.2 \times 10^{24}$  atoms

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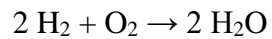
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9. What is the total number of moles of carbon dioxide gas in  $9.03 \times 10^{23}$  molecules?  
(A) 3.0 moles  
(B) 2.0 moles  
(C) 1.5 moles  
(D)  $6.02 \times 10^{23}$  moles
10. What is the mass of  $3.0 \times 10^{23}$  molecules of  $\text{H}_2\text{O}$ ?  
(A) 5 g  
(B) 10 g  
(C) 15 g  
(D) 20 g
11. If a piece of aluminum has a mass of 54 grams, how many atoms of aluminum are present?  
(A)  $1.2 \times 10^{24}$  atoms  
(B)  $2.4 \times 10^{24}$  atoms  
(C) 2 atoms  
(D) 4 atoms
12. What is the percent by mass of **sodium** in sodium chloride,  $\text{NaCl}$ ?  
(A) 18%  
(B) 27 %  
(C) 39%  
(D) 48%
- $\text{C}_3\text{H}_8 + 5 \text{O}_2 \rightarrow 3 \text{CO}_2 + 4 \text{H}_2\text{O}$
13. In the combustion reaction above, if there are 3 moles of propane,  $\text{C}_3\text{H}_8$ , how many moles of water is produced?  
(A) 3 moles  
(B) 6 moles  
(C) 12 moles  
(D) 18 moles

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Questions 14-15 refer to the following chemical reaction.



14. If 4 moles of hydrogen gas ( $\text{H}_2$ ) is placed in a sealed container with oxygen gas, how many moles of oxygen gas will it react with?
- (A) 1 moles
  - (B) 2 moles
  - (C) 4 moles
  - (D) 8 moles
15. With your answer of moles from the previous question, how many grams of oxygen gas ( $\text{O}_2$ ) will react with the 4 moles of hydrogen gas?
- (A) 16 g
  - (B) 32 g
  - (C) 48 g
  - (D) 64 g