

**Writing, Balancing and Identifying Chemical Equation**

- Which of the following is the correct word equation of the above chemical equation?
  - Copper and sulfuric acid react to form copper (I) sulfate and water and sulfur dioxide.
  - Copper and sulfuric acid react to form copper (II) sulfate and water and sulfur dioxide.
  - Copper and sulfuric acid react to form copper (III) sulfate and water and sulfur dioxide.

**Mental effort:**    Very little    Little    Moderate    Large    Very Large

- Which of the following is the correct balance of the equation?
  - $\text{Cu} + 2\text{H}_2\text{SO}_4 \rightarrow \text{CuSO}_4 + 2\text{H}_2\text{O} + \text{SO}_2$
  - $\text{Cu} + 2\text{H}_2\text{SO}_4 \rightarrow \text{CuSO}_4 + 2\text{H}_2\text{O} + \text{SO}_2$
  - $2\text{Cu} + 2\text{H}_2\text{SO}_4 \rightarrow \text{CuSO}_4 + 2\text{H}_2\text{O} + 2\text{SO}_2$

**Mental effort:**    Very little    Little    Moderate    Large    Very Large

- Identify the reaction type in # 2.
  - Synthesis reaction
  - Decomposition reaction
  - Single replacement reaction
  - Double replacement reaction

**Mental effort:**    Very little    Little    Moderate    Large    Very Large



- Which of the following is the correct word equation of the above chemical equation?
  - Solid potassium chlorate breaks down into a solid potassium chloride and oxygen gas.
  - Solid potassium chloride breaks down into a solid potassium chlorate and oxygen gas.
  - Solid potassium chlorate breaks down into a solid potassium hydrochloride and oxygen gas.

**Mental effort:**    Very little    Little    Moderate    Large    Very Large

- The correct balance of the equation is:
  - $3\text{KClO}_3 \text{ (aq)} \rightarrow 2\text{KCl} \text{ (s)} + 2\text{O}_2 \text{ (g)}$
  - $2\text{KClO}_3 \text{ (aq)} \rightarrow 2\text{KCl} \text{ (s)} + 2\text{O}_2 \text{ (g)}$
  - $2\text{KClO}_3 \text{ (aq)} \rightarrow 2\text{KCl} \text{ (s)} + 3\text{O}_2 \text{ (g)}$

**Mental effort:**    Very little    Little    Moderate    Large    Very Large

3. Identify the reaction type in # 2.
  - A. Synthesis reaction
  - B. Decomposition reaction
  - C. Single replacement reaction
  - D. Double replacement reaction

**Mental effort:**    Very little      Little      Moderate      Large      Very Large

**Hydrogen <sub>(g)</sub> and nitrogen monoxide <sub>(g)</sub> react to form water and nitrogen <sub>(g)</sub>.**

1. Which of the following is the correct balanced Chemical equation of the above word equation?
  - A.  $3\text{H}_2 + 2\text{NO} \rightarrow 3\text{H}_2\text{O} + \text{N}_2$
  - B.  $2\text{H}_2 + 2\text{NO} \rightarrow 2\text{H}_2\text{O} + \text{N}_2$
  - C.  $2\text{H}_2 + 2\text{NO} \rightarrow \text{H}_2\text{O} + 2\text{N}_2$

**Mental effort:**    Very little      Little      Moderate      Large      Very Large

2. Identify the reaction type in # 1.
  - A. Synthesis reaction
  - B. Decomposition reaction
  - C. Single replacement reaction
  - D. Double replacement reaction

**Mental effort:**    Very little      Little      Moderate      Large      Very Large

**Hydrochloric acid<sub>(aq)</sub> and magnesium hydroxide<sub>(aq)</sub> react to form magnesium chloride<sub>(aq)</sub> and water <sub>(l)</sub>**

1. Which of the following is the correct balanced chemical equation of the above word equation?
  - A.  $2\text{HCl}_{(aq)} + \text{Mg}(\text{OH})_{2(aq)} \rightarrow \text{MgCl}_{2(aq)} + \text{H}_2\text{O}$
  - B.  $2\text{HCl}_{(aq)} + \text{Mg}(\text{OH})_{3(aq)} \rightarrow \text{MgCl}_{3(aq)} + \text{H}_2\text{O}$
  - C.  $2\text{HCl}_{(aq)} + 2\text{Mg}(\text{OH})_{2(aq)} \rightarrow 2\text{MgCl}_{2(aq)} + 2\text{H}_2\text{O}$

**Mental effort:**    Very little      Little      Moderate      Large      Very Large

2. Identify the reaction type in # 1.
  - A. Synthesis reaction
  - B. Decomposition reaction
  - C. Single replacement reaction
  - D. Double replacement reaction

**Mental effort:**    Very little      Little      Moderate      Large      Very Large