

1. Which equation represents neutralization?

- A) $6\text{Li}(s) + \text{N}_2(g) \rightarrow 2\text{Li}_3\text{N}(s)$
B) $2\text{Mg}(s) + \text{O}_2(g) \rightarrow 2\text{MgO}(s)$
C) $2\text{KOH}(aq) + \text{H}_2\text{SO}_4(aq) \rightarrow \text{K}_2\text{SO}_4(aq) + 2\text{H}_2\text{O}(\ell)$
D) $\text{Pb}(\text{NO}_3)_2(aq) + \text{K}_2\text{CrO}_4(aq) \rightarrow 2\text{KNO}_3(aq) + \text{PbCrO}_4(s)$

2. Which type of reaction occurs when an Arrhenius acid reacts with an Arrhenius base to form a salt and water?

- A) combustion B) decomposition
C) neutralization D) saponification

3. Which acid and base react to form water and sodium sulfate?

- A) sulfuric acid and sodium hydroxide
B) sulfuric acid and potassium hydroxide
C) sulfurous acid and sodium hydroxide
D) sulfurous acid and potassium hydroxide

4. What are the products when potassium hydroxide reacts with hydrochloric acid?

- A) $\text{KH}(s)$, $\text{Cl}^+(aq)$, and $\text{OH}^-(aq)$
B) $\text{K}(s)$, $\text{Cl}_2(g)$, and $\text{H}_2\text{O}(\ell)$
C) $\text{KCl}(aq)$ and $\text{H}_2\text{O}(\ell)$
D) $\text{KOH}(aq)$ and $\text{Cl}_2(g)$

5. Which compound is produced when $\text{HCl}(aq)$ is neutralized by $\text{Ca}(\text{OH})_2(aq)$?

- A) CaCl_2 B) CaH_2 C) HClO D) HClO_2

6. Which solution reacts with $\text{LiOH}(aq)$ to produce a salt and water?

- A) $\text{KCl}(aq)$ B) $\text{CaO}(aq)$
C) $\text{NaOH}(aq)$ D) $\text{H}_2\text{SO}_4(aq)$

7. Which salt is produced when sulfuric acid and calcium hydroxide react completely?

- A) CaH_2 B) CaO C) CaS D) CaSO_4

8. Which word equation represents a neutralization reaction?

- A) base + acid \rightarrow salt + water
B) base + salt \rightarrow water + acid
C) salt + acid \rightarrow base + water
D) salt + water \rightarrow acid + base

9. What are the products of a reaction between $\text{KOH}(aq)$ and $\text{HCl}(aq)$?

- A) H_2 and KClO B) H_2O and KCl
C) KH and HClO D) KOH and HCl

10. Base your answer to the following question on the information below and on your knowledge of chemistry.

A $\text{NaOH}(aq)$ solution and an acid-base indicator are used to determine the molarity of an $\text{HCl}(aq)$ solution. A 25.0-milliliter sample of the $\text{HCl}(aq)$ is exactly neutralized by 15.0 milliliters of 0.20 M $\text{NaOH}(aq)$.

Complete the equation for the neutralization reaction that occurs, by writing a formula for *each* product.



11. Base your answer to the following question on the information below and on your knowledge of chemistry.

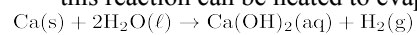
In a titration, 50.0 milliliters of 0.026 M HCl(aq) is neutralized by 38.5 milliliters of KOH(aq).

Complete the equation for the neutralization by writing the formula of the missing product.



12. Base your answer to the following question on the information below.

Calcium reacts with water. This reaction is represented by the balanced equation below. The aqueous product of this reaction can be heated to evaporate the water, leaving a white solid, Ca(OH)₂(s).



Write the chemical name of the base produced in the reaction.
