

Use with textbook pages 234–239.

## Recognizing acids, bases, and salts

1. State whether each of the following is an acid, a base, or a salt.

(a) HI \_\_\_\_\_

(l)  $\text{Al}_2(\text{SO}_4)_3$  \_\_\_\_\_

(b) HBr \_\_\_\_\_

(m)  $\text{CH}_3\text{COOH}$  \_\_\_\_\_

(c) KOH \_\_\_\_\_

(n)  $\text{Mg}(\text{CH}_3\text{COO})_2$  \_\_\_\_\_

(d)  $\text{HNO}_3$  \_\_\_\_\_

(o) calcium nitrate \_\_\_\_\_

(e) NaOH \_\_\_\_\_

(p) sodium chloride \_\_\_\_\_

(f)  $\text{H}_2\text{SO}_4$  \_\_\_\_\_

(q) hydrocyanic acid \_\_\_\_\_

(g)  $\text{H}_2\text{CO}_3$  \_\_\_\_\_

(r) hydrogen fluoride \_\_\_\_\_

(h)  $\text{H}_3\text{PO}_4$  \_\_\_\_\_

(s) barium hydroxide \_\_\_\_\_

(i)  $\text{Na}_3\text{PO}_4$  \_\_\_\_\_

(t) hypochlorous acid \_\_\_\_\_

(j)  $\text{Sr}(\text{OH})_2$  \_\_\_\_\_

(u) aluminum hydroxide \_\_\_\_\_

(k)  $\text{Ca}(\text{OH})_2$  \_\_\_\_\_

(v) magnesium carbonate \_\_\_\_\_

2. What acid is present in vinegar? \_\_\_\_\_

3. What is the chemical name for table salt? \_\_\_\_\_

4. What acid is used in automobile batteries? \_\_\_\_\_

5. What base is found in drain and oven cleaners? \_\_\_\_\_

6. What base is the active ingredient in some antacids? \_\_\_\_\_

7. What acid is produced in the stomach to help digest food? \_\_\_\_\_

Name \_\_\_\_\_

Date \_\_\_\_\_

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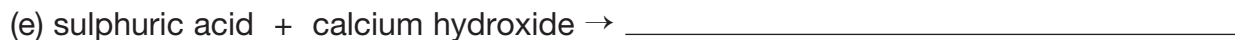
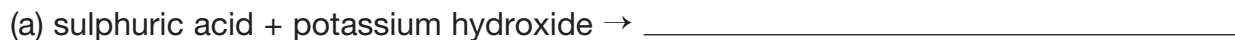
## Acid-base neutralization reactions



1. Complete and balance the following neutralization reactions.



2. Complete and balance the following acid-base neutralization reactions. Include both the word equation and the formula.



Use with textbook pages 237.

## Metal oxides and non-metal oxides

1. What element reacts with a metal or a non-metal to form an oxide?  
\_\_\_\_\_
2. What is a chemical compound that contains a metal chemically combined with oxygen? \_\_\_\_\_
3. What is a chemical compound that contains a non-metal chemically combined with oxygen? \_\_\_\_\_
4. What happens to a solution when a metal oxide dissolves in water?  
\_\_\_\_\_
5. What happens to a solution when a non-metal oxide dissolves in water?  
\_\_\_\_\_
6. What is formed when a metal oxide reacts with water? \_\_\_\_\_
7. What is formed when a non-metal oxide reacts with water?  
\_\_\_\_\_
8. Classify each of the following as a metal oxide or a non-metal oxide.
  - (a)  $\text{Na}_2\text{O}$  \_\_\_\_\_
  - (b)  $\text{B}_2\text{O}_3$  \_\_\_\_\_
  - (c)  $\text{NO}_2$  \_\_\_\_\_
  - (d)  $\text{CaO}$  \_\_\_\_\_
  - (e)  $\text{SO}_2$  \_\_\_\_\_
  - (f)  $\text{BeO}$  \_\_\_\_\_
  - (g)  $\text{ClO}$  \_\_\_\_\_
  - (h)  $\text{Li}_2\text{O}$  \_\_\_\_\_
9. Indicate whether an acid or a base will be produced.
  - (a)  $\text{MgO} + \text{H}_2\text{O} \rightarrow$  \_\_\_\_\_
  - (b)  $\text{SO}_3 + \text{H}_2\text{O} \rightarrow$  \_\_\_\_\_
  - (c)  $\text{CaO} + \text{H}_2\text{O} \rightarrow$  \_\_\_\_\_
  - (d)  $\text{CO}_2 + \text{H}_2\text{O} \rightarrow$  \_\_\_\_\_