# Table L Common Bases

1 Which compound is an Arrhenius base?
   (1) $CO_2$                     (3) $Ca(OH)_2$
   (2) $CaSO_4$                   (4) $C_2H_5OH$

2 Which pair of compounds represents one Arrhenius acid and one Arrhenius base?
   (1) $CH_3OH$ and NaOH       (3) $HNO_3$ and NaOH
   (2) $CH_3OH$ and HCl        (4) $HNO_3$ and HCl

3 The concentration of which ion is increased when LiOH is dissolved in water?
   (1) hydroxide ion           (3) hydronium ion
   (2) hydrogen ion            (4) halide ion

4 Which statement describes characteristics of a 0.01 M KOH(aq) solution?
   (1) The solution is acidic with a pH less than 7.
   (2) The solution is acidic with a pH greater than 7.
   (3) The solution is basic with a pH less than 7.
   (4) The solution is basic with a pH greater than 7.

5 Which substance is an Arrhenius base?
   (1) $HNO_3$                  (3) LiOH
   (2) $KNO_3$                  (4) $CH_3COOH$

6 Which compound is an Arrhenius base?
   (1) HCl                      (3) $Ca(OH)_2$
   (2) $H_3PO_4$                (4) $CH_3COOH$

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Base your answers to questions 7 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, $Ca(OH)_2(s)$.

$$Ca(s) + 2H_2O(\ell) \rightarrow Ca(OH)_2(aq) + H_2(g)$$
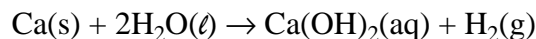
7 Write the chemical name of the base produced in the reaction.

Base your answers to questions 8 on the information below and on your knowledge of chemistry.

A company produces a colorless vinegar that is 5.0% $HC_2H_3O_2$ in water. Using thymol blue as an indicator, a student titrates a 15.0-milliliter sample of the vinegar with 43.1 milliliters of a 0.30 M NaOH(aq) solution until the acid is neutralized.

8 Identify the negative ion in the NaOH(aq) used in this titration.

**Answer Keys**

1  3

2  3

3  1

4  4

5  3

6  3

7  Allow 1 credit for calcium hydroxide.

8  Allow 1 credit for $OH^-$ or hydroxide.