

REVIEW

6 CHAPTER 6

Mixed Review

1. Creative Thinking A red juice extracted by boiling red cabbage can serve as a pH indicator. Red cabbage indicator is red at low pH (pH = 1 to 4), a light purple at neutral pH (pH = 7), green at moderately basic pH (pH = 8 to 11), and yellow at very basic pH (pH = 13).

a. Construct a pH scale below that indicates colors using this information.

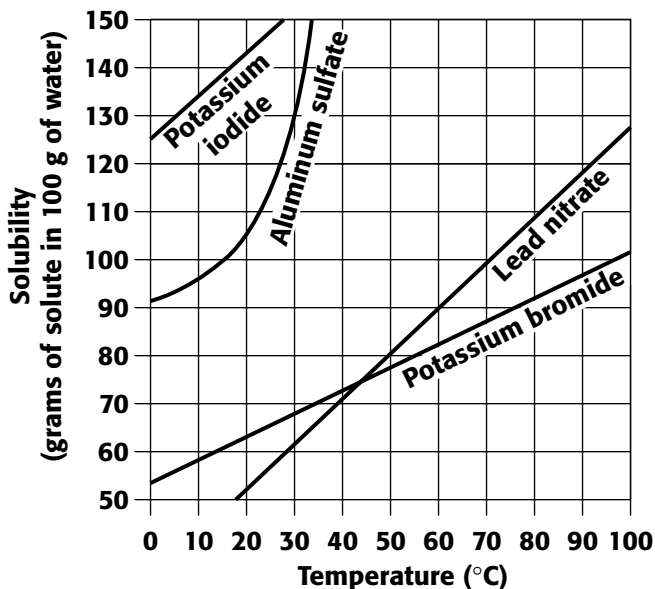
b. Indicate on the pH scale above the approximate locations of the common liquids listed below:

Liquid	pH
Water	7.0
Cow's milk	6.5
Vinegar	2.8
Egg	7.8

Liquid	pH
Milk of magnesia	10.5
Orange juice	3.5
Black tea	5.5
Sea water	8.5

c. Compare the acidity of orange juice with that of cow's milk and black tea.

2. Interpreting Graphics Look at the temperature-solubility graph of several solids that is shown below. Refer to the graph when answering the following questions. (Note: Data were collected at normal atmospheric pressure.)



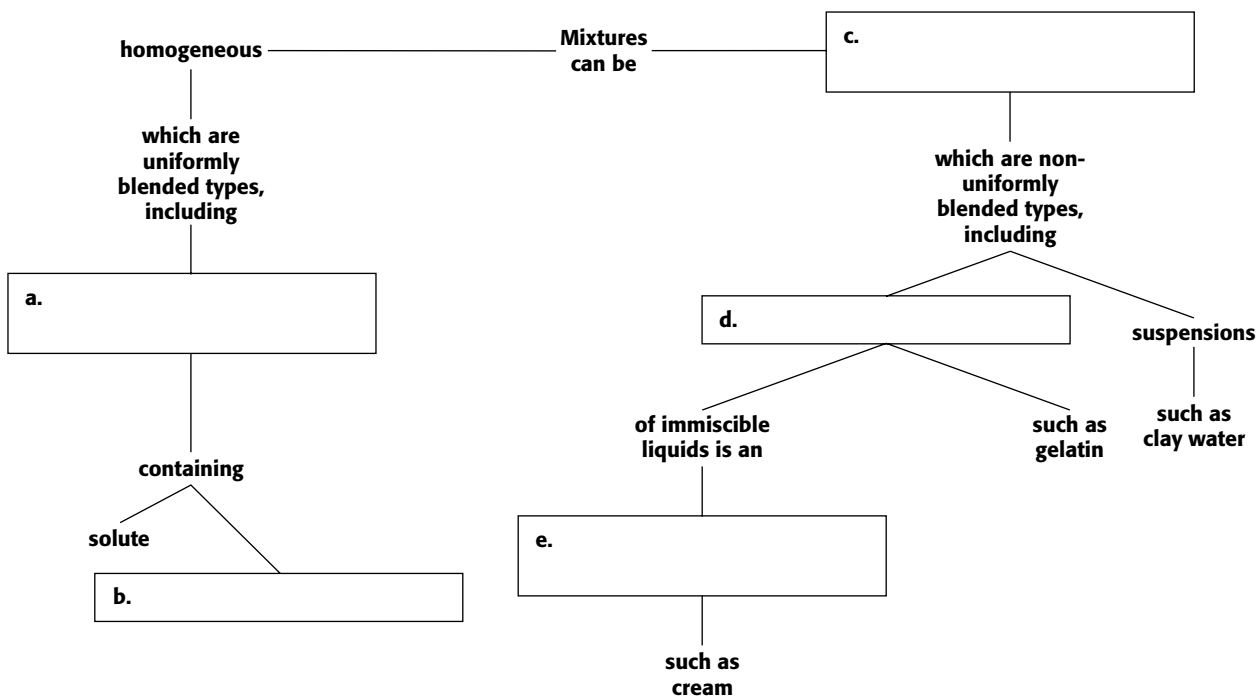
Chapter 6 Mixed Review, continued

a. Determine the solubilities of the four solids at 20°C and arrange them in order of increasing solubility.

b. What does this graph demonstrate about the relationship between the solubility of a solid and solvent temperature?

3. **Applying Knowledge** When water and lithium chloride, LiCl, are mixed, LiCl dissolves. When toluene and LiCl are mixed, LiCl does not dissolve. When toluene and water are mixed, they form two immiscible layers. Deduce the nature of toluene (that is, polar, nonpolar, or ionic) from the three observations. Explain.

4. **Concept Mapping** Complete the concept map below by writing the correct word or phrase in the lettered boxes.



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