

Answers to Review of Chapter 1

1. (2) 2. (1) 3. (4) 4. (3) 5. (3) 6. (1) 13. (3) 14. (1) 15. (1) 16. (2) 17. (3) 18. (4)
7. (4) 8. (1) 9. (3) 10. (2) 11. (4) 12. (3) 19. (2) 20. (3)

Answers to Questions in Reviewing Intermediate-Level Science

DEFINING MATTER

Page 34—Process Skill 1: Reading for Understanding

- Glass resembles a solid because it has a definite shape.
- Glass is different from a solid because its particles are not arranged in a regular pattern. OR Glass does not have a melting point like solids do.
- Glass is a mixture because it has small amounts of other substances.

Pages 36–37—Process Skill 2: Interpreting Data in a Table

1. (2) 2. (3) 3. (2)

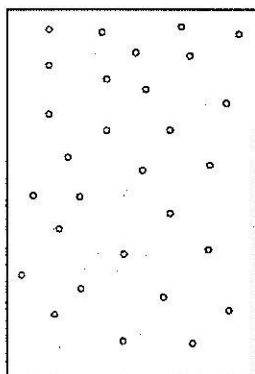
Review Questions Pages 37–40

Part I

1. (2) 2. (3) 3. (3) 4. (4) 5. (1) 6. (3)
7. (3) 8. (2) 9. (1) 10. (2) 11. (2) 12. (2)

Part II

13.



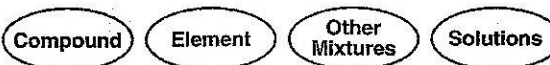
- To convert a substance to a gas, it must be heated.
- During a physical change no new substance is formed. In a chemical change, new substances are formed.
- melting
- Physical change, because no new substances are formed.

18.

What is the name of this phase?	Solid	Liquid	Gas
Does this phase have a definite volume or no definite volume?	Definite volume	Definite volume	No definite volume
Does this phase have a definite shape or no definite shape?	Definite shape	No definite shape	No definite shape
Describe the particles of this phase as being very close, close or very far apart.	Very close	Close	Very far apart

SOLUTIONS

Pages 42–43—Process Skill 3: Using a Dichotomous Key



- 2a If it can be broken down into something simpler **Compound**
 2b If it cannot be broken down into something simpler **Element**
 3a Components are evenly distributed **Solution**
 3b Components are not evenly distributed **Other mixtures**

Review Questions—Pages 47–50

Part I

19. (1) 20. (3) 21. (4) 22. (1) 23. (3) 24. (3)
25. (3)

Part II

26.

$$\text{density} = \frac{\text{mass}}{\text{volume}}$$

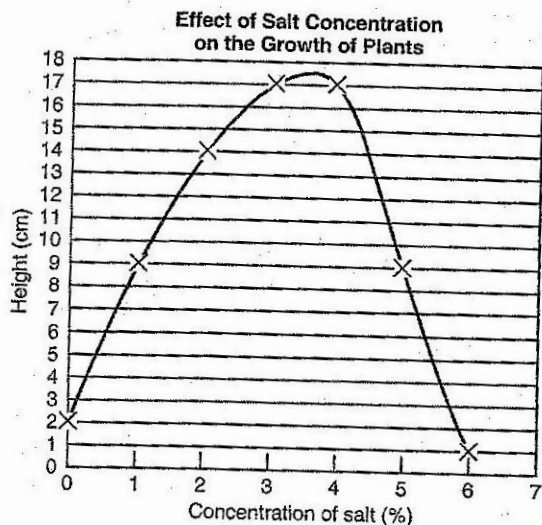
$$\text{density} = \frac{27.0 \text{ g}}{10.0 \text{ cm}^3} = 2.7 \text{ g/cm}^3$$

27. The aluminum block will float in mercury.
 28. The density of a 50.0-cm³ aluminum block would be the same as the one described in Table A. Density does not depend on the amount of the sample.
 29. In a mixture, the parts can be separated by physical changes, a compound cannot. In a compound there is one set of properties. In a mixture, each substance retains its own properties. Examples of compounds are salt and water. Examples of mixtures are salt water and air.
 30. Mass of the marble = 28.0 g; volume: 30.0 mL - 20.0 mL = 10.0 mL

$$\text{density} = \frac{\text{mass}}{\text{volume}}$$

$$\text{density} = \frac{28.0 \text{ g}}{10.0 \text{ mL}} = 2.7 \text{ g/mL}$$

31.-33.



34. At 3.5%, it would grow to be at least 17 cm tall.
 35. The plant grows best at salt concentrations of between 3 and 4 %.
 OR

As the concentration of salt increases, the height increases until it reaches 3.5%. Then it starts to decrease.

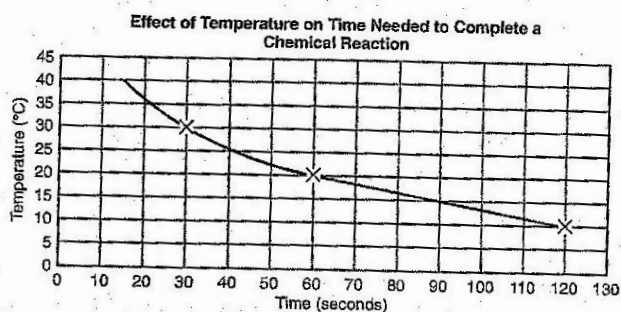
OR

Too little salt or too much salt is not good for this plant.

CHANGES IN MATTER

Page 56—Process Skill 4: Making Predictions, Determining a Quantitative Relationship, Graphing Data

1. (2) 2. (3)
 3.



Review Questions Pages 57-60

Part I

36. (2) 37. (3) 38. (2) 39. (3) 40. (4) 41. (3)
 42. (3) 43. (2)

Part II

44.

Test Tube	Concentration HCl (%)	Time to collect 25 mL H ₂ (s)
A	4	64
B	8	33
C	12	16
D	20	4

45. How does concentration affect the speed of a reaction?
 46. Temperature also affects the rate of the reaction.
 47. A 16% solution should take 8 seconds to generate 25 mL of H₂.
 48. As concentration of acid increases, the speed of the reaction increases.