

Chapter 10 Cell Growth and Division

Section Review 10-1

Reviewing Key Concepts

Completion *On the lines provided, complete the following sentences.*

1. The larger the cell, the more trouble it has moving water and nutrients through the _____.
2. A cell's _____ determines the rate at which it uses food and oxygen.
3. To avoid growing too large, cells regulate their size by _____.

Short Answer *On the lines provided, answer the following questions.*

4. What can happen if a cell were to get too large for the amount of DNA it has?

5. What substances must pass through a cell's membrane for the cell to continue to function?

6. How does a cell's ratio of surface area to volume change as the cell grows larger?

7. Why do cells divide?

Reviewing Key Skills

Calculating *Complete the following table.*

Cell	Surface Area	Volume	Ratio of Surface Area to Volume
1	42 cm ²	8. _____	7:1
2	78 cm ²	13 cm ³	9. _____
3	10. _____	16 cm ³	5:1

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Chapter 10 Cell Growth and Division

Section Review 10-2

Reviewing Key Concepts

Short Answer *On the lines provided, answer the following questions.*

1. What are the four phases of the cell cycle?

2. What happens when the cell copies its chromosomes?

3. What happens during cytokinesis?

Classifying *On the line provided, label each event with one of the four phases of mitosis in which it occurs. A phase may be used more than once.*

- _____ 4. The chromosomes line up across the middle of the cell.
- _____ 5. Chromosomes become visible.
- _____ 6. Centrioles separate.
- _____ 7. Sister chromatids separate into individual chromosomes.
- _____ 8. Nuclear envelope re-forms.
- _____ 9. The nucleolus disappears and the nuclear envelope breaks down.
- _____ 10. Each chromosome is connected to a spindle fiber.
- _____ 11. The individual chromosomes move apart.

Reviewing Key Skills

12. **Applying Concepts** Explain why the terms *cell division* and *mitosis* should not be used interchangeably.

13. **Calculating** If a particular type of cell completes one cell cycle in 75 minutes, and you start with one cell, how many cells would be present after 7.5 hours?

14. **Inferring** Many plant cells have more than two complete sets of chromosomes in each cell. Explain how this might occur.

15. **Comparing and Contrasting** How does an animal cell differ from a plant cell during cell division?
