

Section 10–2 Cell Division (pages 244–249)

This section describes the main events of the cell cycle. It also explains what happens during mitosis, when cell division occurs.

Chromosomes (page 244)

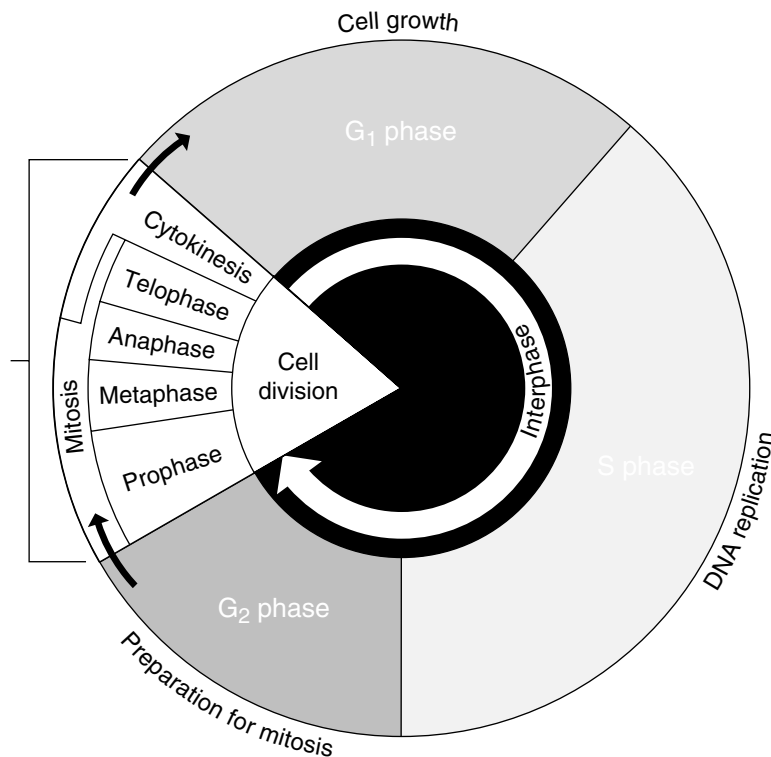
1. Is the following sentence true or false? Chromosomes are not visible in most cells except during cell division. _____
2. When chromosomes become visible at the beginning of cell division, what does each chromosome consist of? _____

3. Each pair of chromatids is attached at an area called the _____.

The Cell Cycle (page 245)

4. The period of growth in between cell divisions is called _____.
5. What is the cell cycle? _____

6. Complete the diagram of the cell cycle by writing the names of each of the four phases.



7. The division of the cell nucleus during the M phase of the cell cycle is called _____.

Events of the Cell Cycle (page 245)

8. Interphase is divided into what three phases?

a. _____ b. _____ c. _____

9. What happens during the G₁ phase? _____

10. What happens during the S phase? _____

11. What happens during the G₂ phase? _____

Mitosis (pages 246–248)

12. What are the four phases of mitosis?

a. _____ c. _____

b. _____ d. _____

13. Circle the letter of the name for the two tiny structures located in the cytoplasm near the nuclear envelope at the beginning of prophase.

a. centrioles c. centromeres

b. spindles d. chromatids

14. What is the spindle? _____

Match the description of the event with the phase of mitosis it is in. Each phase may be used more than once.

Event

_____ 15. The chromosomes move until they form two groups near the poles of the spindle.

_____ 16. The chromosomes become visible.

_____ 17. A nuclear envelope re-forms around each cluster of chromosomes.

_____ 18. The centrioles take up positions on opposite sides of the nucleus.

_____ 19. The chromosomes line up across the center of the cell.

_____ 20. The nucleolus becomes visible in each daughter nucleus.

Phase

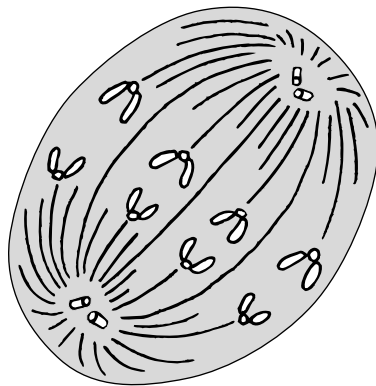
a. Prophase

b. Metaphase

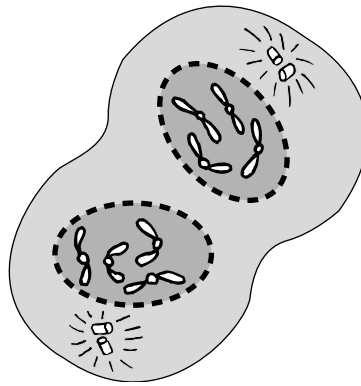
c. Anaphase

d. Telophase

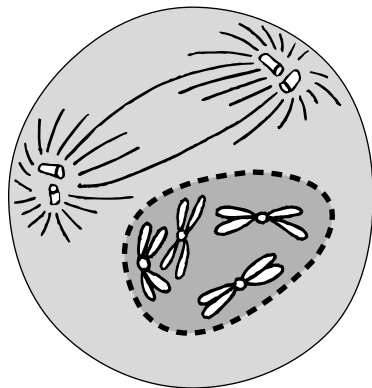
21. Identify each of the four phases of mitosis pictured below.



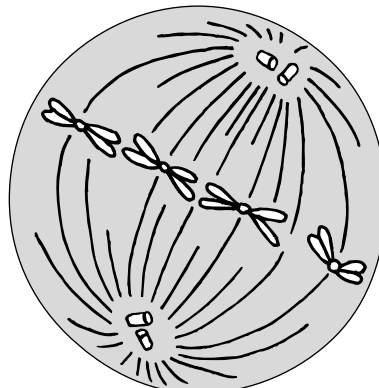
a. _____



c. _____



b. _____



d. _____

Cytokinesis (page 248)

22. What is cytokinesis? _____

23. How does cytokinesis occur in most animal cells? _____

24. Circle the letter of what forms midway between the divided nucleus during cytokinesis in plant cells.

- a. cell nucleus
- b. cytoplasm
- c. cell plate
- d. cytoplasmic organelles

Reading Skill Practice

You may sometimes forget the meanings of the vocabulary terms that were introduced earlier in the textbook. When this happens, you can check the meanings of the terms in the Glossary, which you can find at the end of the book, preceding the Index. Use the Glossary to review the meanings of all the vocabulary terms listed on page 244. Write their definitions on a separate sheet of paper.