

Section 10–3 Regulating the Cell Cycle (pages 250–252)

This section describes how the cell cycle is regulated. It also explains how cancer cells are different from other cells.

Controls on Cell Division (page 250)

1. What happens to the cells at the edges of an injury when a cut in the skin or a break in a bone occurs? _____

2. What happens to the rapidly dividing cells when the healing process nears completion?

Cell Cycle Regulators (page 251)

3. What do cyclins regulate? _____

4. What are internal regulators? _____

5. Circle the letter of each sentence that is true about external regulators.

a. They direct cells to speed up or slow down the cell cycle.

b. They prevent the cell from entering anaphase until all its chromosomes are attached to the mitotic spindle.

c. They include growth factors.

d. They prevent excessive cell growth and keep the tissues of the body from disrupting each other.

Uncontrolled Cell Growth (page 252)

6. What is cancer? _____

7. Complete the flowchart about cancer.

Cancer cells don't respond to signals that regulate _____.



Cancer cells form masses of cells called _____.



Cancer cells break loose and spread throughout the _____.

8. Is the following sentence true or false? Cancer is a disease of the cell cycle.

WordWise

Complete the sentences by using one of the scrambled words below.

Word Bank

spetmeaha sdtihcmora eshaploet phsaeorp kniesscitoy aasehpan
nilpsed lecl yeclc elcl voidini metonercer astinhepre sotimsi
nacecr cinlyc tenilorec

1. The division of a cell's cytoplasm is called _____.
2. The final phase of mitosis is _____.
3. The phase of mitosis in which microtubules connect the centromere of each chromosome to the poles of the spindle is _____.
4. At the beginning of cell division, each chromosome consists of two sister _____.
5. The longest phase of mitosis is _____.
6. The phase of mitosis that ends when the chromosomes stop moving is _____.
7. The process by which a cell divides into two new daughter cells is called _____.
8. A tiny structure located in the cytoplasm near the nuclear envelope is a(an) _____.
9. A disorder in which some of the body's cells lose the ability to control growth is called _____.
10. The area where a pair of chromatids is attached is the _____.
11. The division of the cell nucleus is called _____.
12. A protein that regulates the timing of the cell cycle in eukaryotic cells is _____.
13. The series of events that cells go through as they grow and divide is known as the _____.
14. A fanlike microtubule structure that helps separate the chromosomes is a(an) _____.
15. The time period between cell divisions is called _____.