

What Is Meiosis?

Section Review

5.3

The Big Idea!

Chromosome number is reduced in meiosis. 5.3–5.4

Concepts

- Almost all cells in an organism contain two complete sets of chromosomes. Reproductive cells contain only one set.
- Cells produced by mitosis are diploid; cells produced by meiosis are haploid.
- Meiosis keeps the number of chromosomes constant from generation to generation. During meiosis, homologous pairs of chromosomes replicate and then separate to form four daughter-cell nuclei.

Words

diploid haploid meiosis homologous pair

PART A

1. What are gametes?

2. How does the number of chromosomes in gametes differ from the number of chromosomes in an organism's body cells?

3. How many chromosomes will an organism have in its body cells if its gametes contain the following number of chromosomes?

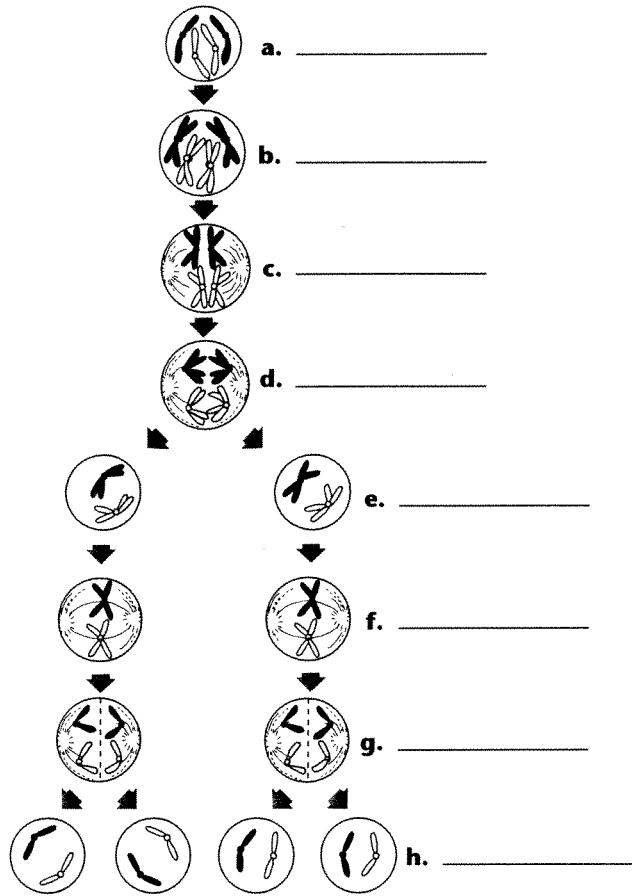
- _____ a. 2
- _____ b. 10
- _____ c. 25

4. How does a diploid cell differ from a haploid cell?

5. What are the matching pairs of chromosomes in a diploid cell called?

6. Are the cells involved in sexual reproduction haploid or diploid? Why is this important?

PART B Study the diagram. Then complete the following.



1. Identify the phases of meiosis I and meiosis II in the diagram by writing the name of the correct phase on the line provided.
2. Where are the sister chromatids at the start of meiosis?

3. During which phase of meiosis I do spindle fibers form?

4. During what phase of meiosis I do homologous pairs of chromosomes separate?

5. At the end of telophase I are daughter cells diploid or haploid?

6. When do chromosomes replicate during meiosis?

7. What occurs during meiosis II?

8. Why is meiosis important?
