Section 11–4 Meiosis (pages 275–278)

This section explains how gametes form in the process of meiosis. It also explains how meiosis is different from mitosis.

Introduction (page 275)

1. List the two things that Mendel's principles of genetics required in order to be true.

a. _____

_____

b. _____

_____

_____

Chromosome Number (page 275)

2. What does it mean when two sets of chromosomes are homologous? _____

_____

_____

_____

3. Circle the letter of each way to describe a diploid cell.

a. 2N

b. Contains two sets of homologous chromosomes

c. Contains a single set of homologous chromosomes

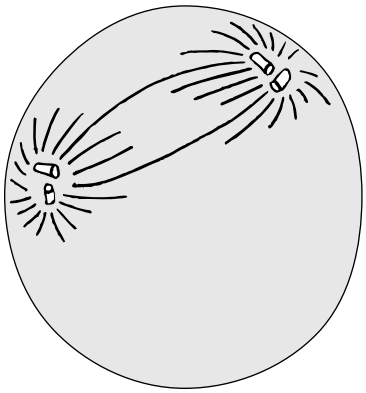
d. A gamete

4. Circle the letter of the number of chromosomes in a haploid *Drosophila* cell.

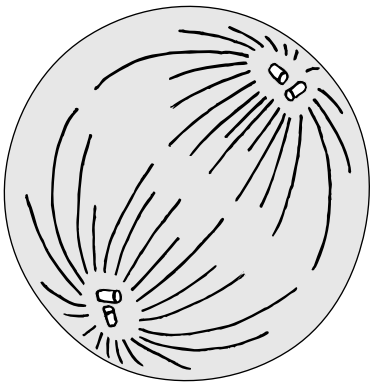
a. 8 **b.** 4 **c.** 2 **d.** 0

Phases of Meiosis (pages 276–277)

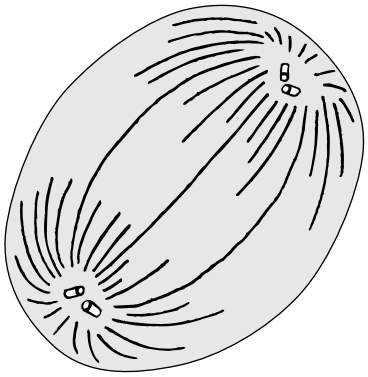
5. Draw the chromosomes in the diagrams below to show the correct phase of meiosis.



Prophase I



Metaphase I



Anaphase II

Name_____ Class_____ Date_____

6. Why is meiosis described as a process of reduction division? _____

_____

_____

_____

7. What are the two distinct divisions of meiosis?

a. _____ **b.** _____

8. Is the following sentence true or false? The diploid cell that enters meiosis becomes 4 haploid cells at the end of meiosis. _____

9. How does a tetrad form in prophase I of meiosis? _____

_____

_____

10. Circle the number of chromatids in a tetrad.

a. 8 **b.** 6 **c.** 4 **d.** 2

11. What results from the process of crossing-over during prophase I? _____

_____

_____

_____

12. Circle the letter of each sentence that is true about meiosis.

a. During meiosis I, homologous chromosomes separate.

b. The two daughter cells produced by meiosis I still have the two complete sets of chromosomes as a diploid cell does.

c. During anaphase II, the paired chromatids separate.

d. After meiosis II, the four daughter cells contain the diploid number of chromosomes.

Gamete Formation (page 278)

Match the products of meiosis with the descriptions.

Description	Product of Meiosis
_____ **13.** Haploid gametes produced in males	**a.** eggs
_____ **14.** Haploid gametes produced in females	**b.** sperm
_____ **15.** Cells produced in females that do not participate in reproduction	**c.** polar bodies

Comparing Mitosis and Meiosis (page 278)

16. Circle the letter of each sentence that is true about mitosis and meiosis.

a. Mitosis produces four genetically different haploid cells.

b. Meiosis produces two genetically identical diploid cells.

c. Mitosis begins with a diploid cell.

d. Meiosis begins with a diploid cell.