Meiosis Practice Study Guide

Answer the following questions.

Meiosis - Chromosome Number

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

___ 2. Write the letter or letters that describe a diploid cell in the blank to the left.

a. 2N
b. Contains two sets of homologous chromosomes
c. Contains a single set of homologous chromosomes
d. A gamete

___3 If a *Drosophila* cell has a diploid number of 8, what is its haploid number?

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

Phases of Meiosis

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

5. What are the two distinct stages of meiosis?

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

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

___ 8. Write the number of chromatids in a tetrad in the blank to the left.

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

9. What is the result of the process of crossing-over during prophase I?

___ **10.** Write the letter of **each** sentence that is true about meiosis in the blank to the left.
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
Match the products of meiosis with the descriptions.

Description	Product of Meiosis
_____**11.** Haploid gametes produced in males _____**12.** Haploid gametes produced in females _____**13.** Cells produced in females that do not participate in reproduction	**a.** eggs **b.** sperm **c.** polar bodies

Comparing Mitosis and Meiosis

___ **14.** Write the letter of **each** sentence that is true about mitosis and meiosis in the blank to the left.
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.