Name _____ Class _____ Date _____

SECTION 8-1 REVIEW

CHROMOSOMES

VOCABULARY REVIEW Distinguish between the terms in each of the following pairs of terms.

1. histone, nonhistone _____

2. chromatid, centromere _____

3. sex chromosome, autosome _____

4. diploid cell, haploid cell _____

MULTIPLE CHOICE Write the correct letter in the blank.

_____ 1. During cell division, the DNA in a eukaryotic cell is tightly packed and coiled into structures called

a. centromeres. **b.** histones. **c.** haploids. **d.** chromosomes.

_____ 2. Between cell divisions, the DNA in a eukaryotic cell is uncoiled and spread out; in this form it is called

a. chromatid. **b.** chromatin. **c.** histone. **d.** nonhistone.

_____ 3. The chromosomes of most prokaryotes consist of proteins and

a. a single circular DNA molecule.
b. a single linear DNA molecule.
c. a pair of linear DNA molecules joined in the center.
d. a pair of homologous, circular DNA molecules.

_____ 4. Humans have 46 chromosomes in all cells except sperm and egg cells. How many of these chromosomes are autosomes?

a. 2 **b.** 23 **c.** 44 **d.** 46

_____ 5. If an organism has a diploid, or 2*n*, number of 16, how many chromosomes do its sperm cells or eggs cells contain?

a. 8 **b.** 16 **c.** 32 **d.** 64

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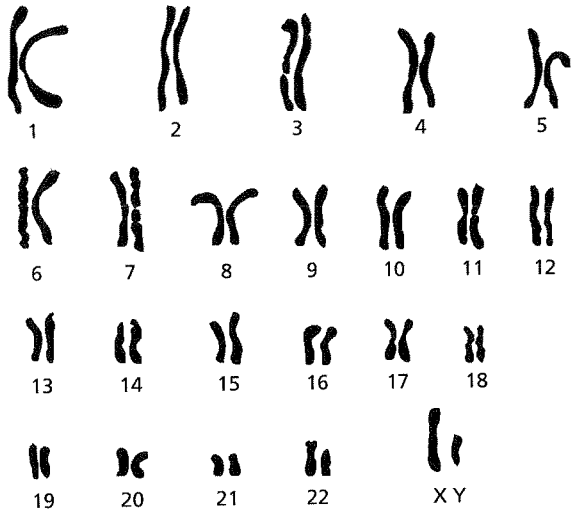
SHORT ANSWER Answer the questions in the space provided.

1. What role do proteins play in enabling the enormous amount of DNA in a eukaryotic cell to fit into the nucleus, and what are those proteins called? _____

2. In what ways are homologous chromosomes similar? _____

3. What is the picture below called, and how is it used to determine the sex of a person?



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4. **Critical Thinking** Some relatively simple eukaryotes, such as the adder's tongue fern, may have many more chromosomes than a more-complex eukaryote, such as a mammal. What might this suggest about the size and organization of chromosomes in different species?

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STRUCTURES AND FUNCTIONS The diagram below shows structures isolated from the nucleus of a dividing eukaryotic cell. Label each structure or pair of structures in the space provided.