



Name _____

Period _____

Date _____

SECTION
7.1

CHROMOSOMES AND PHENOTYPE
Study Guide

KEY CONCEPT

The chromosomes on which genes are located can affect the expression of traits.

VOCABULARY

- carrier
- sex-linked gene
- X chromosome inactivation

MAIN IDEA: Two copies of each autosomal gene affect phenotype.

1. What are sex chromosomes?

2. What are autosomes?

3. How is a carrier different from a person who has a genetic disorder?

Complete the two Punnett squares below to compare autosomal recessive disorders with autosomal dominant disorders. Fill in the possible genotypes for offspring, and write in the phenotype (no disorder, carrier, or disorder) for each.

Autosomal Recessive

| | | |
|----------|----------|----------|
| | <i>D</i> | <i>d</i> |
| <i>D</i> | | |
| <i>d</i> | | |

Autosomal Dominant

| | | |
|----------|----------|----------|
| | <i>D</i> | <i>d</i> |
| <i>D</i> | | |
| <i>d</i> | | |

MAIN IDEA: Males and females can differ in sex-linked traits.

4. What are sex-linked genes?

STUDY GUIDE, CONTINUED

Fill in the Punnett square below to show the pattern of inheritance for sex chromosomes.

Sex Chromosome Inheritance

| | | |
|---|---|---|
| | X | X |
| X | | |
| Y | | |

5. In humans, how does a gamete from a male determine the sex of offspring?

6. For what are genes on the Y chromosome responsible?

7. How are sex-linked genes expressed differently in the phenotypes of males and females?

Vocabulary Check

8. The verb *carry* means “to transport.” How is the everyday meaning of *carry* related to the meaning of the term *carrier* in genetics?

9. What is X chromosome inactivation?
