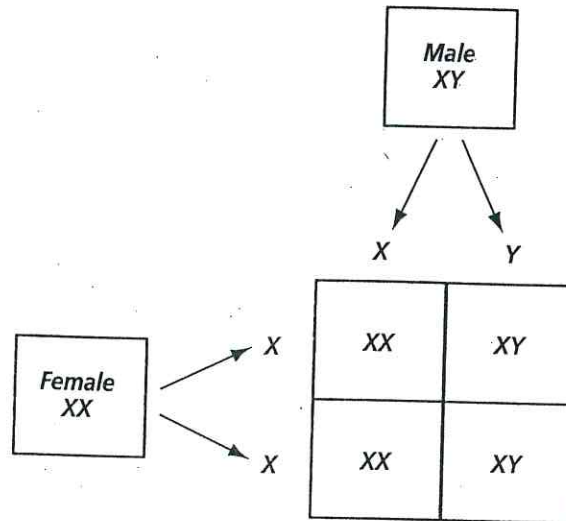


Chapter
12
Patterns of Heredity and Human
Genetics, continued
Content Mastery
Section 12.2 When Heredity Follows
Different Rules
Section 12.3 Complex Inheritance
of Human Traits
Study the Diagram

This diagram shows the mating of a human male (XY) and a human female (XX). Use the diagram to answer the questions.



1. What do the letters X and Y stand for?

2. Which chromosome is found only in the male?

3. True or false? A person having two X chromosomes is female.

4. In the mating shown in the diagram, which statement is **true**? Circle the letter.
 - a. All the offspring are female.
 - b. All the offspring are male.
 - c. One-half the offspring are male.
 - d. Three of the four offspring are female.
5. What happens to offspring with an extra sex chromosome, such as XXX or XXY?

Name _____

Date _____

Warm-Up: SEX-LINKED TRAITS

A female has the chromosomes **XX**, while a male has the chromosomes **XY**. In sex-linked inheritance the genes are carried on the X chromosome as a rule and are usually recessive.

For example: A woman with a normal gene on one X chromosome will not be colorblind, but is called a carrier for colorblindness. In order to be colorblind, a woman must carry the recessive allele for colorblindness on each of her X chromosomes. A male is either normal or has colorblindness. He cannot be a carrier.

1. What is the probability that a color-blind woman who marries a man with normal vision will have a color-blind child?

2. In fruit flies, white eyes is a sex-linked recessive trait. Normal eye color is red. If a white-eyed male is crossed with a heterozygous female, what proportion of the offspring will have red eyes?
