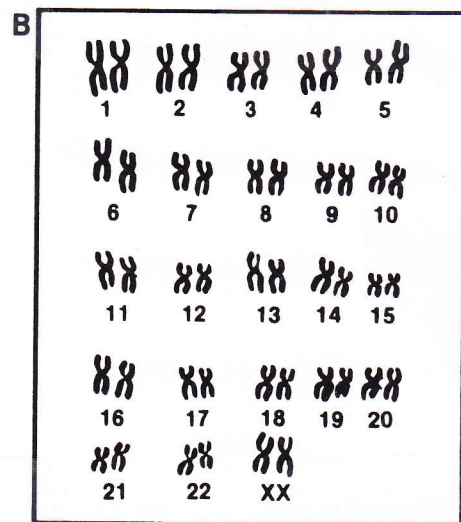
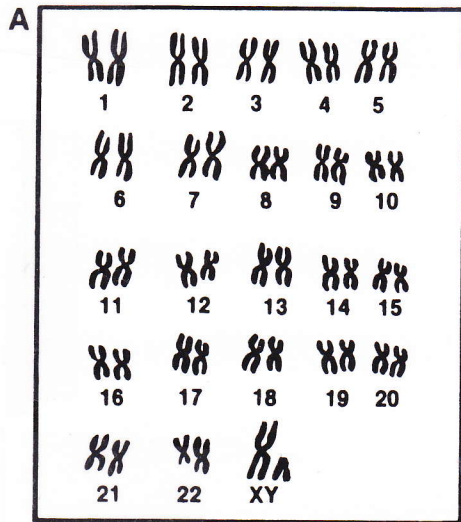


### Section 14-1/14-2 Review

#### Karyotype Review

1. Examine the chromosomes shown below from two people. Then answer the questions that follow.

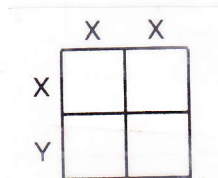


a. Is person A male or female? \_\_\_\_\_ How do you know? \_\_\_\_\_

b. Is person B male or female? \_\_\_\_\_ How do you know? \_\_\_\_\_

c. Circle the sex chromosomes of each of the above people.

2. Complete the Punnett square. Then, answer the questions below.



a. Out of four children, how many are expected to be female? \_\_\_\_\_

b. Out of four children, how many are expected to be male? \_\_\_\_\_

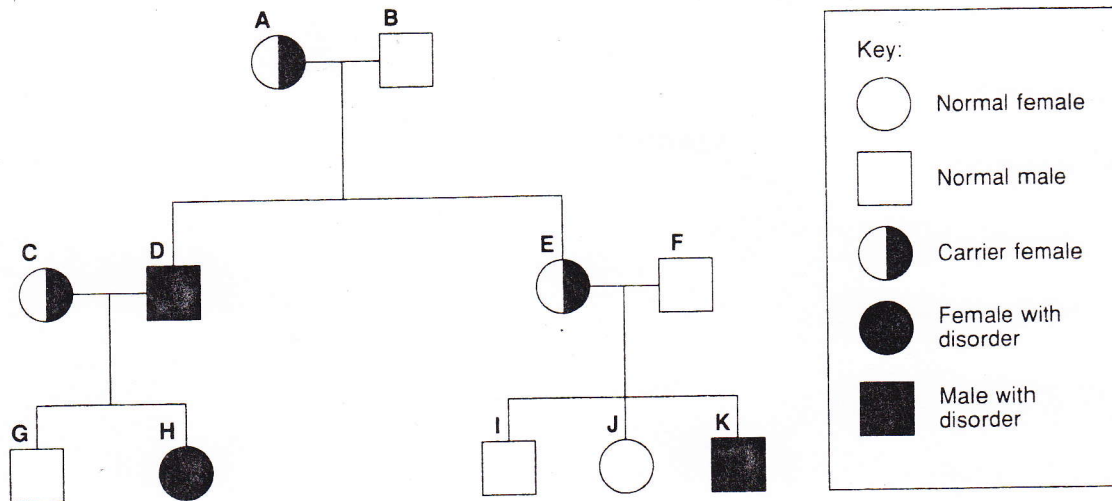
c. Which sex chromosome do both males and females have? \_\_\_\_\_

d. Which sex chromosome do only males have? \_\_\_\_\_

e. Shade the female offspring in the above Punnett square. Leave the male offspring unshaded.

## Pedigree Review

A. Duchenne muscular dystrophy is a deadly disorder in which the muscles grow progressively weaker. The disease is caused by a recessive gene on the X Chromosome. The pedigree chart below illustrates the inheritance of this gene. Use the chart to answer the questions that follow.



1. Is Duchenne muscular dystrophy more likely to occur in males or in females? Explain your answer. \_\_\_\_\_

2. Individual H is a female with this disorder. Explain how she inherited this disease. \_\_\_\_\_

3. Individual K has this disorder, yet his father did not. Explain how this is genetically possible. \_\_\_\_\_

4. Individual G does not have the disease, yet his mother was a carrier and his father has the disease. Explain how this is possible. \_\_\_\_\_

5. Why is the genotype of the father unimportant when investigating sex-linked traits inherited by male offspring? \_\_\_\_\_

### Blood Type Review

In humans, blood type A ( $I^A$ ) and B ( $I^B$ ) are dominant over type i.

1. Make a Punnett square to show a cross between a woman with blood type A ( $I^A i$ ) and a man with blood type B ( $I^B i$ )


- a. The genotypic ratio(s) of the offspring are: \_\_\_\_\_
- b. The phenotypic ratio(s) of the offspring are: \_\_\_\_\_

### Sex-Linked Review

Colorblindness in humans is a sex-linked trait carried on the X chromosome.  $C$  represents the gene for colorblindness. Complete the table by writing the genotype for each phenotype. Use these choices:

$XX$     $XY$     $X^C X$     $X^C Y$     $X^C X^C$

	Phenotype	Genotype
7.	Normal male	
8.	Colorblind male	
9.	Normal female	
10.	Carrier female	
11.	Colorblind female	

12. Make a Punnett square for a cross between a colorblind male and a female who is not colorblind, but who carries the gene for colorblindness.


How many of the offspring are:

- a. colorblind males? \_\_\_\_\_
- b. males who are not colorblind? \_\_\_\_\_
- c. female carriers? \_\_\_\_\_
- d. colorblind females? \_\_\_\_\_
- e. females without the gene for colorblindness \_\_\_\_\_