

Name _____ Date _____ Period _____

Worksheet: Sex-linked Crosses

UNIT 3: GENETICS

Directions: Answer the following genetic cross problems. You can refer to the "Punnett Square Cheat Sheet" attached at the end of this worksheet to help you solve the different types of problems. It is essential that you know all of the vocabulary included in the "cheat sheet" as well. Remember when you are doing a genetic cross to follow the steps below to complete!

STEP 1: Determine what kind of problem you are trying to solve.

STEP 2: Determine letters you will use to specify traits.

STEP 3: Determine parent's genotypes.

STEP 4: Make your Punnett square and make gametes

STEP 5: Complete cross and determine possible offspring.

STEP 6: Determine genotypic and phenotypic ratios.

Sex-linked Genetic Crosses

1. In Guinea pigs, the genotype (BB) is black, and the genotype (bb) is white color, and (Bb) is grey color. The gene (B) and (b) are sex-linked. What type of offspring are to be expected in a cross between a grey female and a black male?

2. In humans, colorblindness is due to the recessive allele (c), and normal vision is due to the dominant allele (C). What is the expected offspring between a normal man and a colorblind woman? Give both genotypic and phenotypic ratios

3. What would you expect when a colorblind man marries a colorblind woman? Give both genotypic and phenotypic ratios

4. What would you expect when a normal man marries a woman who is a carrier for colorblindness? Give both genotypic and phenotypic ratios

5. Hemophilia is also a sex-linked trait. A normal man marries a normal woman and they have a child with hemophilia. What are the genotypes of the parents?

6. Why are sex-linked traits much more common in males than females? Explain