

Name _____

Date _____

Sex-Linked Traits Worksheet

1. Albinism is a recessive autosomal genetic disorder that causes the complete or partial absence of pigments in the skin, hair and eyes. Fill in the Punnett Square and determine the expected genotypic ratios from crossing a homozygous recessive and heterozygous dominant parents.

Parent Genotypes: _____ X _____

Parent Phenotypes : _____

Genotypic ratio: _____

% of kids with disorder: _____ % of carrier kids: _____

2. Refer to the Punnett square:

	X^B	Y
X^B	$X^B X^B$	$X^B Y$
X^b	$X^B X^b$	$X^b Y$

Reminder: A female has 2 X chromosomes.
A male has an X and a Y chromosome.
B is dominant (normal color vision).
b is recessive (color blindness).

- a) Tell if the father has color-blindness.
- b) Specify if the father has a recessive allele.
- c) State whether the only child that could have color blindness is male or female.

3. Red-green color blindness is a recessive sex-linked (X chromosome) genetic disorder where the middle (green) or long (red-yellow) wavelength cones in the eyes have a partial or complete loss of function. Fill in the Punnett Square and determine the expected genotypes and phenotypes from crossing a normal male and a female who is a carrier for color blindness.

Parent Genotypes: _____ X _____

Genotypic ratio: _____

Phenotypic ratio: _____

% of kids with disorder: _____ Gender: _____

4. Fill in the Punnett Square for a cross of a male with color blindness with a normal female.

Parent Genotypes: _____ X _____

Genotypic ratio: _____

Phenotypic ratio: _____

% of kids with disorder: _____ Gender: _____

5. Fill in the Punnett Square for a cross of a male who is colorblind and a female who is a carrier for color blindness.

Parent Genotypes: _____ X _____

Genotypic ratio: _____

Phenotypic ratio: _____

% of kids with disorder: _____ Gender: _____

6. Fill in the Punnett Square for a cross of a normal male and a female who is colorblind.

Parent Genotypes: _____ X _____

Genotypic ratio: _____

Phenotypic ratio: _____

% of kids with disorder: _____ Gender: _____

7. Fill in the Punnett Square for a cross of a colorblind male and a colorblind female.

Parent Genotypes: _____ X _____

Genotypic ratio: _____

Phenotypic ratio: _____

% of kids with disorder: _____ Gender: _____

8. Explain how sex-linked traits are different than autosomal traits.

9. Explain why males have more sex-linked disorders than females.