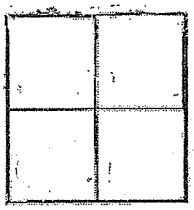
Name: _____

Date: _____ Period: _____

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 homozygous recessive and heterozygous dominant parents.

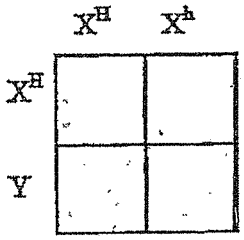


Genotypes: _____ Genotypic Ratio: _____

Phenotypes: _____

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

2) 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 colorblindness.

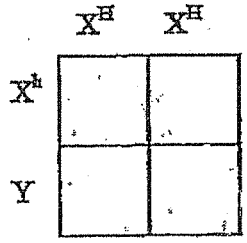


Genotypes: _____

Circle all phenotype(s): normal male, male with colorblindness, normal female, carrier female, female with colorblindness

% of kids with disorder: _____ Circle their gender(s): male / female

3) Color blindness is a recessive sex-linked genetic disorder located on the X chromosome. Fill in the Punnett square for a cross of a male with color blindness and a normal female.

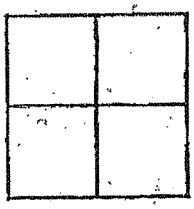


Genotypes: _____

Circle all phenotype(s): normal male, male with colorblindness, normal female, carrier female, female with colorblindness

% of kids with disorder: _____ Circle their gender(s): male / female

4) Color blindness is a recessive sex-linked genetic disorder located on the X chromosome. Fill in the Punnett square for a cross of a male who is color blind and a female who is a carrier for color blindness.

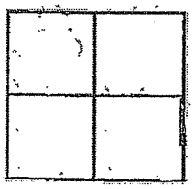


Genotypes: _____

Circle all phenotype(s): normal male, male with colorblindness, normal female, carrier female, female with colorblindness

% of kids with disorder: _____ Circle their gender(s): male / female

5) Color blindness is a recessive sex-linked genetic disorder located on the X chromosome. Fill in the Punnett square for a cross of a normal male and a female who is color blind.

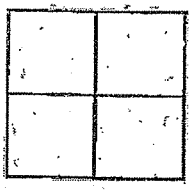


Genotypes: _____

Circle all phenotype(s): normal male, male with colorblindness,
normal female, carrier female, female with colorblindness

% of kids with disorder: _____ Circle their gender(s) male / female

6) Color blindness is a recessive sex-linked genetic disorder located on the X chromosome. Fill in the Punnett square for a cross of a color blind male and a color blind female.



Genotypes: _____

Circle all phenotype(s): normal male, male with colorblindness,
normal female, carrier female, female with colorblindness

% of kids with disorder: _____ Circle their gender(s) male / female

7) Explain how sex-linked traits are different than autosomal traits.

_____

_____

_____

_____

8) Explain why males have more sex-linked disorders than females. _____

_____

_____

_____

_____

Name: Answer Key Row: _____

Date: _____ Period: _____

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 homozygous recessive and heterozygous dominant parents.

	a	a
A	Aa	Aa
a	aa	aa

Genotypes: Aa , aa Genotypic Ratio: 2:2

Phenotypes: carrier, Albino

% of kids with disorder: 50% % of carrier kids: 50%

2) 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 colorblindness.

	X^H	X^h
X^H	X^HX^H	X^HX^h
Y	X^HY	X^hY

Genotypes: X^HX^H, X^HX^h, X^HY, X^hY

Circle all phenotype(s): normal male, male with colorblindness, normal female, carrier female, female with colorblindness

% of kids with disorder: 25% Circle their gender(s) male / female

3) Color blindness is a recessive sex-linked genetic disorder located on the X chromosome. Fill in the Punnett square for a cross of a male with color blindness and a normal female.

	X^H	X^H
X^h	X^HX^h	X^HX^h
Y	X^HY	X^HY

Genotypes: X^HX^h, X^HY

Circle all phenotype(s): normal male, male with colorblindness, normal female, carrier female, female with colorblindness

% of kids with disorder: 0% Circle their gender(s) male / female

4) Color blindness is a recessive sex-linked genetic disorder located on the X chromosome. Fill in the Punnett square for a cross of a male who is color blind and a female who is a carrier for color blindness.

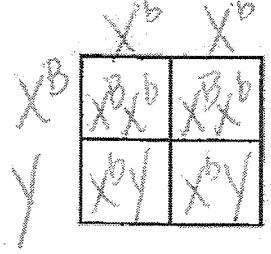
	X^B	X^b
X^b	X^BX^b	X^bX^b
Y	X^BY	X^bY

Genotypes: X^BX^b, X^bX^b, X^BY, X^bY

Circle all phenotype(s): normal male, male with colorblindness, normal female, carrier female, female with colorblindness

% of kids with disorder: 50% Circle their gender(s) male / female

5) Color blindness is a recessive sex-linked genetic disorder located on the X chromosome. Fill in the Punnett square for a cross of a normal male and a female who is color blind.

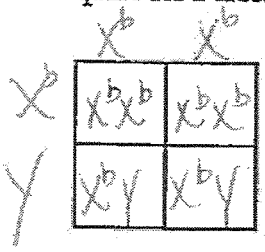


Genotypes: X^BX^b, X^bY

Circle all phenotype(s): normal male, male with colorblindness, normal female, carrier female, female with colorblindness

% of kids with disorder: 50% Circle their gender(s) male / female

6) Color blindness is a recessive sex-linked genetic disorder located on the X chromosome. Fill in the Punnett square for a cross of a color blind male and a color blind female.



Genotypes: X^bX^b, X^bY

Circle all phenotype(s): normal male, male with colorblindness, normal female, carrier female, female with colorblindness

% of kids with disorder: 100% Circle their gender(s) male / female

7) Explain how sex-linked traits are different than autosomal traits.

Sex-Linked effect males more - Trait is attached only to X chromosome

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

Because males only have 1 X chromosome, so it is not possible for a male to be a carrier - it only takes 1 recessive gene for a male to have the disorder where it takes 2 for a female to have the disorder.