

Name: \_\_\_\_\_

### Sex-linked practice

The two sex chromosomes are X and Y. What is the genotype of a male and a female?

Genotype of Males: \_\_\_\_\_

Genotype of Females: \_\_\_\_\_

Diseases that are sex linked are usually on the X chromosome. Here is how we show genes on the X chromosome:

$X^G X^G$

What is the sex of this person? \_\_\_\_\_

Is this person heterozygous or homozygous? \_\_\_\_\_

Does this person have dominant or recessive genes? \_\_\_\_\_

### Try it!!

A female is heterozygous for a sex-linked trait. Using the letter B to represent the trait, write the female's genotype.

Genotype: \_\_\_\_\_

A female is homozygous recessive for a sex-linked trait. Using the letter b to represent the trait, write the female's genotype.

Genotype: \_\_\_\_\_

Name: \_\_\_\_\_

As we know, diseases that are sex linked are on the X chromosome. Here is another way we show genes on the X chromosome:

$X^G Y$

What is the sex of this person? \_\_\_\_\_

*TRICKY!!* Is this person heterozygous or homozygous? \_\_\_\_\_

Does this person have a dominant or recessive gene? \_\_\_\_\_

Try it!!

A male is dominant for a sex-linked trait. Using the letter B to represent the trait, write the male's genotype.

Genotype: \_\_\_\_\_

A male is recessive for a sex-linked trait. Using the letter b to represent the trait, write the male's genotype.

Genotype: \_\_\_\_\_

*Tricky!!* Can a male be a carrier for a sex-linked trait? \_\_\_\_\_

Explain:

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Name: \_\_\_\_\_

## SEX LINKED GENETIC DISEASE PRACTICE PROBLEMS

### Read this first!!

Color blindness is a sex-linked trait. It is recessive ( $X^b$ ), so it is “hidden” if a dominant gene ( $X^B$ ) is present.

### Do Together

A woman has color blindness (so she is homozygous recessive) and marries a normal eye site man. What are their genotypes? Fill in the blanks.

Woman:  $X^- X^-$

Man:  $X - Y$

They decide to have children. Set up the punnett square and do the cross.


What is the chance they will have a child who is colorblind? \_\_\_\_\_

Name: \_\_\_\_\_

### Practice on Your Own

A woman is a carrier for colorblindness (heterozygous). She marries a man who is color blind. What are their genotypes? Fill in the blanks below.

Woman:  $X - X^{-}$

Man:  $X - Y$

They decide to have children. Set up the punnett square and do the cross.


What is the chance they will have a child who is colorblind? \_\_\_\_\_

Extra Challenging Problem: Hemophilia is a sex linked recessive disease. People with hemophilia do not stop bleeding when they get a cut.

A woman has hemophilia. What is her genotype? : \_\_\_\_\_

A man has hemophilia. What is his genotype? : \_\_\_\_\_

A woman is a carrier for hemophilia. What is her genotype?: \_\_\_\_\_

Can a man be a carrier for hemophilia? \_\_\_\_\_

Explain: