

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:

$X^C X^c$

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:

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: $X^b X^b$

Man: $X^B Y$

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: $X^B X^b$

Man: $X^b Y$

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: