

GENETICS TEST REVIEW

heredity
gene
trait
allele
dominant
recessive
homozygous
heterozygous
genotype
phenotype
monohybrid cross
Punnett square
probability

types of inheritance- what makes the trait the following types? Examples?

incomplete dominance
codominance
polygenic trait
multiple alleles
sex-linked trait

Mendel's Laws- what do these laws describe?

Law of dominance
Law of independent assortment
Law of segregation

What represents a dominant allele? A recessive allele?

What is a carrier? Can males be a carrier of a sex-linked trait? Why or why not?

Complete a Punnett Square and give genotypic outcome, phenotypic outcome and/ or probability

Complete dominance
Incomplete dominance
Sex-linked trait

***The above information is described in Ch. 9 and Ch. 12 from your textbook*

PRACTICE PROBLEMS

1. Colorblindness is an inherited trait that is sex-linked. Use **B** or **b** to represent the alleles for this trait. Remember that it is a sex-linked trait, so you must also use the **X** and **Y-chromosomes** for the sex of the individual.

Create a Punnett square for a colorblind male married to a female who is a carrier for colorblindness.

2. Suppose that in guinea pigs there is a gene that controls the length of fur. There are two alleles, long (F^L) and short (F^S) fur. These alleles exhibit incomplete dominance and in heterozygous individuals medium-length fur results.

- Make a Punnett square to show a cross between two medium furred guinea pigs.
- What is the expected genotypic outcome?
- What is the expected phenotypic outcome?
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3. Suppose a female with the blood type genotype $I^A i$ and a male with $I^A I^B$ had offspring. Show a Punnett square and list the phenotypes that could result from this mating.

4. A brown cat is homozygous for the trait that produces coat color. The brown cat is mated with a white cat. The cats have numerous offspring that are all of the white phenotype.

- Show the alleles for each color. Brown allele _____ White allele _____
- Make a Punnett square showing a cross between two heterozygous cats.