

Punnett Squares

Name _____ Date _____ Class _____

1. In humans, brown eyes are dominant over blue. A brown-eyed man marries a brown-eyed woman and they have 3 children, two of whom are brown-eyed and one of whom is blue-eyed. Draw the Punnett square that illustrates this marriage.

What are the parent's genotypes? _____

What are the possible genotypes of the children? _____

2. Cross a heterozygous long and black mouse with a homozygous recessive short and white mouse. Show the Punnett square and summarize the genotype and phenotype ratio.
3. In peas, tall is dominant over short and red flower color is dominant over white. If two heterozygous tall, heterozygous red plants are crossed, what is the probability that the offspring will be tall and white? Show your work!

4. In Japanese four-o'clocks, predict the phenotype ratio of a cross between the following. Show your work!
- A red plant and a white plant.
 - A white plant and a pink plant.
 - A red plant and a pink plant.
 - Two pink plants.

5. A woman homozygous for type A blood marries a man who is heterozygous for type B. What will be the possible genotypes and phenotypes for their children? Show your Work!

6. What is the probability that a couple whose blood types are AB and O will have a type A child?

7. In squash, the allele for white fruits is dominant over the allele for yellow. If a white fruited plant is crossed with a yellow-fruited plant, and all of the offspring are white, what are the possible genotypes of the parents and the offspring?

8. In race horses, black hair and trotting gait are dominant traits. Recessive traits are chestnut hair and pacing gait. The genes for hair color and gait are on two different chromosomes. Use a Punnett square to determine the possible offspring from a cross between two heterozygous black trotters.

9. In fruit flies, the allele for normal size wings is dominant over the allele for vestigial wings. The allele for normal size eyes is dominant over the allele for small eyes. Use a Punnett square to predict the results of a cross between an individual that is heterozygous for both traits and one that is homozygous recessive for both traits.

