

Answer the following questions based on your knowledge of genetics.

1. Waldo's genotype is Pp and he has purple skin. What is his phenotype?
2. Scott has a dominant trait and a recessive trait. Is he homozygous or heterozygous? How do you know?
3. Rachel has red hair (recessive) and both of her parents have brown hair. Is this possible? How? What is her genotype?
4. Todd's parents are both tall (dominant). Could Todd be short? Explain why or why not.
5. Aniya is heterozygous for rolling her tongue. Rolling the tongue is a dominant trait. Her son cannot roll his tongue. How is this possible?
6. Bryden is right handed and his brother Ryder is left handed. Can they have the same parents? Explain.
7. A husband and wife are both heterozygous for having a widow's peak. Having a widow's peak is a dominant trait. Can they have a child with a widow's peak? Can they have a child without a widow's peak? Explain both.
8. Mork and Morkette have 8 children. All of their children have purple hair. Green hair is dominant to purple hair. What could the children's possible genotypes be? Explain.

Monohybrid Practice Problems

Show Punnett Square, give Genotype AND Phenotype for each problem.

1. In humans brown eyes are dominant over blue eyes. What type of offspring would you expect if you crossed a heterozygous brown eyed person to a heterozygous brown eyed person?
2. A widow's peak hairline is dominant to straight hairline. Cross a heterozygous widow's peak hairline person to a straight hairline person.
3. In humans premature gray hair is dominant over normal hair coloring. Cross a homozygous premature gray haired person to a homozygous normal haired person.
4. In humans tongue rolling is dominant to non-tongue rolling. What would be the expected type of offspring if a homozygous tongue roller was crossed to a heterozygous tongue roller?
5. Brown hair is dominant over light colored hair. Cross two light haired people.
6. In a certain plant yellow fruit is dominant to white fruit. A heterozygous plant with yellow fruit is crossed with a plant with white fruit. Determine the probable offspring.
7. In a certain animal, black fur is dominant to white fur. Determine the possible offspring from crosses between:
 - a. Homozygous black x white
 - b. Heterozygous black x heterozygous black
8. In garden peas, round peas are dominant to wrinkled peas. If you crossed a homozygous dominant and homozygous recessive what would be the genotype and phenotype of the offspring?
9. In corn, normal kernels are dominant to waxy kernels. If you crossed a waxy kernel plant to a heterozygous normal plant what type of seeds would be produced?
10. Tall plants are dominant to short plants in the garden pea plant. Cross a heterozygous tall plant to a heterozygous tall plant.