

1.) In pea plants, purple flowers (P) are dominant to white flowers (p). If a pea plant that is heterozygous is crossed with another heterozygous pea plant, what percent of the offspring will be purple?

2.) In racoons, black eye rings are dominant to white eye rings. What are the genotypes of two racoons that produce 124 black eye rings and 35 white eye ringed offspring when mated? Use a Punnett square to prove your results.

3.) In Russian blue cats, color is controlled by incomplete dominance. The alleles for color are Grey (G) and white (W), when an individual inherits both alleles color will be expressed as blue. What percent of the offspring will be blue if a blue cat and a white cat are crossed?

4.) In peonies, the allele for petals (W) is codominant to the allele for red petals (R), if a peonie has both alleles it will have white and red petals. If a red peonie is crossed with a red and white peonie, what percent of the offspring will have the same genotype as one of the parents?

5.) A woman has a child who has type O blood. She knows that she has type A blood. She goes on the TV show Maury to find out who the father of her child is. There are three possible choices for the father listed below. Who is not the father and who could be the father? Prove using a punnet square who the father is.

Daniel: Blood type AB

Jamie: Blood type heterozygous B

Chad: Blood type homozygous A

6.) Hemophilia is a X-linked disorder. If a man who has hemophilia has a child with a woman who is a carrier for the trait. What is the probability that a daughter has hemophilia?

7.) In fruit flies, eye colour is a sex-linked trait (X-linked) where red is dominant to white. Also, straight wings (S) is dominant to curly wings (s). If a curly-winged male who has red eyes mates with a heterozygous red eyed, heterozygous straight winged female, what percentage of the offspring will have curly wings and white eyes?

8.) The table below shows the genotypes and phenotypes for eye color in humans. If a woman with dark brown eyes has a child with a man who has dark blue eyes, what are the chances of the child having brown-green flecked eyes?

Genotype	Eye Colour
AA BB	black-brown
AA Bb	dark brown
AA bb	brown
Aa BB	brown-green flecked
Aa Bb	light brown
Aa bb	grey-blue
aa BB	green
aa Bb	dark blue
aa bb	light blue