

## Practice Quiz: Punnett Squares B I O L O G Y

**Directions:** Complete the following Punnett Squares and give the genotypic and phenotypic ratios of the offspring. **You must show your work to receive credit!**

1. Assume that blood type is inherited as A and B dominant over O, but A and B are codominant over each other. Genotypes ( $I_A I_A$ ) and ( $I_A i$ ) are then phenotypically type A, genotypes ( $I_B I_B$ ) and ( $I_B i$ ) are type B, genotype ( $I_A I_B$ ) is type AB, and genotype ( $i i$ ) is type O blood. A man with blood type  $I_A I_B$  marries a woman with type  $I_A i$  blood. What are the genotypic and phenotypic ratios of the offspring?


Genotypic ratio \_\_\_\_\_

Phenotypic ratio \_\_\_\_\_

2. In certain breeds of dogs, deafness is due to a recessive allele (d) of a particular gene, and normal hearing is due to its dominant allele (D). A heterozygous normal dog is crossed with deaf dog. What are the genotypic and phenotypic ratios of the offspring?


Genotypic ratio \_\_\_\_\_

Phenotypic ratio \_\_\_\_\_

3. In snapdragons, red (R) is not completely dominant over white (r) flowers. What color flowers would you expect when you cross a red flower with a white flower? What are the genotypic and phenotypic ratios of the offspring?


Genotypic ratio \_\_\_\_\_

Phenotypic ratio \_\_\_\_\_

4. In humans, Hunters Syndrome (H) is dominant and normal would be (h). A homozygous recessive individual is normal. A heterozygous man marries a woman who is normal. What are the genotypic and phenotypic ratios of the offspring?


Genotypic ratio \_\_\_\_\_

Phenotypic ratio \_\_\_\_\_

5. In humans, colorblindness is a sex-linked trait due to the recessive allele (c), and normal vision is due to the dominant allele (C). What is the expected offspring between a colorblind man and a woman who is heterozygous for colorblindness? Give both genotypic and phenotypic ratios


Genotypic ratio \_\_\_\_\_

Phenotypic ratio \_\_\_\_\_

6. In Guinea pigs, the genotype (BB) is black, and the genotype (bb) is white color, and (Bb) is grey color, The gene (B) and (b) are sex-linked. What type of offspring are to be expected in a cross between a black female and a white male?


Genotypic ratio \_\_\_\_\_

Phenotypic ratio \_\_\_\_\_