

Name(s): _____

Class: ____ Date: _____

Group 1: Incomplete Dominance

Scenario: In snapdragons, flower color is controlled by incomplete dominance. The two alleles are red (R) and white (w). The heterozygous genotype is expressed as pink.

- a. What is the phenotype of a plant with the genotype RR? _____
- b. What is the phenotype of a plant with the genotype ww? _____
- c. What is the phenotype of a plant with the genotype Rw? _____



Problem: A pink-flowered plant is crossed with a white-flowered plant. What is the probability of producing a pink-flowered plant? ____%

Parents: ____ X ____

Show the Punnett Square:

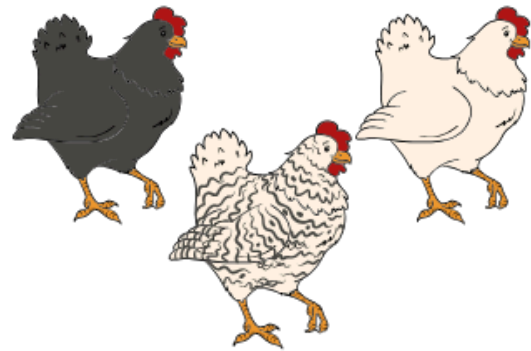
Name(s): _____

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Group 2: Co-dominance

Scenario: In some chickens, the gene for feather color is controlled by codominance. The allele for black is B and the allele for white is W. The heterozygous phenotype is known as erminette (black and white spotted).

- a. What is the genotype for black chickens? ____
- b. What is the genotype for white chickens? ____
- c. What is the genotype for erminette chickens? ____



erminette chicken

If two erminette chickens were crossed, what is the probability that:

- a. They would have a black chick? ____%
- b. They would have a white chick? ____%

Parents: ____ X ____

Show the Punnett Square:

Name(s): _____

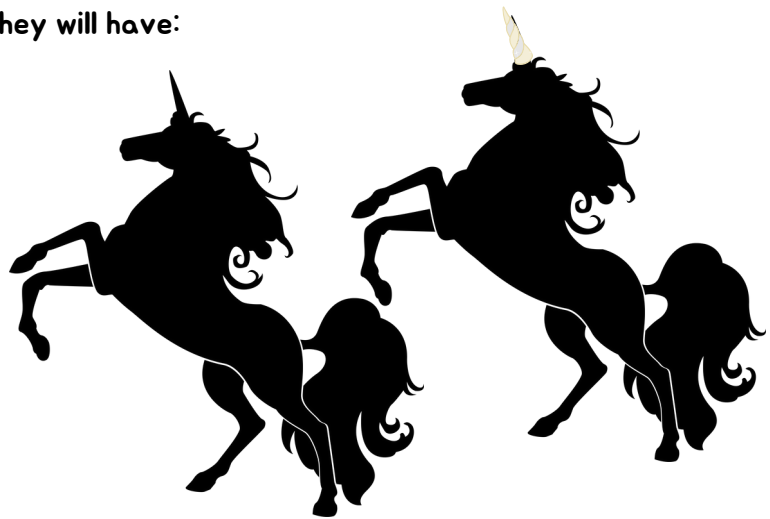
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Group 3: Epistasis

Scenario: It is a little known 'fact' that unicorns demonstrate epistasis for their horn presence and color. The presence of a unicorn's horn is recessive, while no horn (polled) is dominant. The color of the horn can be either white (dominant) or black (recessive). Obviously, if the horn is not present, the genes for color are not expressed. Use this information to complete the questions below.

Two unicorns mate. One unicorn has a white horn and has genotype hhWw (heterozygous for horns and color, respectively). The other unicorn has the genotype Hhww (it has genes for a black horn, but no horn). What is the likelihood that they will have:

- a. A colt with a white horn? ___/16
- b. A colt with a black horn? ___/16
- c. A colt with no horn? ___/16



Complete the dihybrid Punnett Square below to answer the questions above.

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Group 4: Polygenic Inheritance

Scenario: Human height is a polygenic trait. One Individual with the genotype Aabbcc has a child with a AaBBGg Individual. What is the likelihood their child will be AABBGG?

Complete the Punnett Square below to answer the questions above.