

19 Multiple choice questions

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What is the phenotype of a plant with the genotype WR?

- ☐ Pink flowers.
- ☐ Bluish-gray.
- ☐ White flowers.
- ☐ Both red flowers and white flowers.

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What are the genotypes of the parents in a cross between a homozygous black bird and a homozygous white bird?

- ☐ 100% (from the cross of BB x WW).
- ☐ 25% (from the Punnett square of WB x WB).
- ☐ 50% (from the cross of WR x WW).
- ☐ BB (black) and B'B' (white).

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What is the probability of a black chicken and a white chicken producing an erminette chick?

- ☐ 0% (from the cross of WW x WW).
- ☐ 100% (from the cross of BB x WW).
- ☐ 50% (from the cross of BB x BB).
- ☐ 75% (from the cross of BB x BW).

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What is the probability of two erminette chickens producing a white chick?

- ☐ 25% (from the Punnett square of BW x BW).
- ☐ 50% (from the Punnett square of BB x BB).
- ☐ 0% (from the Punnett square of BB x WW).
- ☐ 75% (from the Punnett square of WW x BW).

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What is the probability of producing white calves from a roan bull and a roan cow?

- ☐ 75% (from the Punnett square of WB x BB).
- ☐ 25% (from the Punnett square of WB x WB).
- ☐ 0% (from the Punnett square of WB x WB').
- ☐ 50% (from the Punnett square of BB x BB).

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What is the genotype for erminette chickens?

- ☐ BW (heterozygous, expressing both black and white feather colors).
- ☐ BB or FB (homozygous for the black feather color allele).
- ☐ The expected offspring would include white, roan, and brown calves.
- ☐ WW or FW (homozygous for the white feather color allele).

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What is the probability of producing a pink-flowered plant from a pink-flowered plant crossed with a white-flowered plant?

- ☐ 75% (from the cross of WR x WR).
- ☐ 25% (from the cross of WW x WR).
- ☐ 100% (from the cross of WR x BB).
- ☐ 50% (from the cross of WR x WW).

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What is incomplete dominance?

- ☐ A genetic scenario where the phenotype of the heterozygote is completely different from both homozygous phenotypes.
- ☐ A genetic scenario where the phenotype of the heterozygote shows both homozygous phenotypes equally.
- ☐ A genetic scenario where the phenotype of the heterozygote matches one of the homozygous phenotypes exactly.
- ☐ A genetic scenario where the phenotype of the heterozygote is an intermediate blend of the two homozygous phenotypes.

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What is the genotype for white chickens?

- ☐ WW or BW (homozygous for the mixed feather color allele).
- ☐ BW (heterozygous, expressing both black and white feather colors).
- ☐ WW or FW (homozygous for the white feather color allele).
- ☐ BB or FB (homozygous for the black feather color allele).

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What is codominance?

- ☐ A genetic scenario where both alleles in a heterozygote are fully expressed, resulting in offspring with a phenotype that shows both traits distinctly.
- ☐ A genetic scenario where both alleles in a heterozygote blend to create a new phenotype.
- ☐ A genetic scenario where one allele in a heterozygote is dominant, masking the other trait.
- ☐ A genetic scenario where one allele in a heterozygote is suppressed, resulting in offspring with a single trait.

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What cross will produce the most pink-flowered plants?

- ☐ Crossing two white-flowered plants (WW x WW) will produce the most pink-flowered plants.
- ☐ Crossing a pink-flowered plant with a red-flowered plant (WR x RR) will produce the most pink-flowered plants.
- ☐ Crossing two pink-flowered plants (WR x WR) will produce the most pink-flowered plants.
- ☐ Crossing a red-flowered plant with a white-flowered plant (RR x WW) will produce the most pink-flowered plants.

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What is the phenotype of a plant with the genotype WW?

- ☐ Purple flowers.
- ☐ White flowers.
- ☐ Blue flowers.
- ☐ Red flowers.

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What is the genotype for black chickens?

- ☐ WW or FW (homozygous for the white feather color allele).
- ☐ BB or FB (homozygous for the black feather color allele).
- ☐ BB (black) and B'B' (white).
- ☐ BB or WB (homozygous for the mixed feather color allele).

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What is the probability of two erminette chickens producing a black chick?

- ☐ 75% (from the Punnett square of BW x BB).
- ☐ 25% (from the Punnett square of BW x BW).
- ☐ 50% (from the Punnett square of BB x WW).
- ☐ 0% (from the Punnett square of WW x WW).

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What is the phenotype of the offspring from a cross between a homozygous black bird and a homozygous white bird?

- ☐ Bluish-gray.
- ☐ White Flowers.
- ☐ Red Flowers.
- ☐ Pink Flowers.

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What results from crossing a black individual with a bluish-gray individual?

- ☐ The offspring will be a mix of black (BB) and white (WW).
- ☐ The offspring could be either black (BB) or bluish-gray (BB').
- ☐ The offspring will all be bluish-gray (BB').
- ☐ The offspring will all be black (BB).

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What is the phenotype of a plant with the genotype RR?

- ☐ Red flowers.
- ☐ Pink flowers.
- ☐ White flowers.
- ☐ Blue flowers.

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What is the probability of producing roan calves from a roan bull and a roan cow?

- ☐ 0% (from the Punnett square of BB x BB).
- ☐ 75% (from the Punnett square of WB x WB').
- ☐ 25% (from the Punnett square of WB x BB).
- ☐ 50% (from the Punnett square of WB x WB).

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What is the expected offspring from mating a roan bull and a roan cow?

- ☐ The expected offspring would include white and brown calves.
- ☐ The expected offspring would include only brown calves.
- ☐ The expected offspring would include only white calves.
- ☐ The expected offspring would include white, roan, and brown calves.