

Incomplete and Co-dominance Practice Questions

Incomplete Dominance: occurs when 2 different alleles control a characteristic, but neither is dominant and both are partly expressed in the phenotypes.

1) In some cats, the gene for tail length shows incomplete dominance. Cats with long tails and those with no tails are homozygous for the respective alleles. Cats with one long-tail allele and one short-tail allele have short tails. Let L represent cats with long tails and N represent cats with no tails. Predict the phenotypic ratio of a cross between:

A long tail cat and a cat with no tail

A long-tail cat and a short-tail cat

A short-tail cat and a cat with no tail

Two short-tail cats

2) An Andalusian fowl, plumage (feather colour) is an incomplete dominant trait. A cross between a black plumage and white plumage results in a blue plumage. Let B represent black and W represent white. Show the results of a cross between:

A white and black plumage

Blue and white plumage

Blue and blue plumage

Co-dominance: occurs when 2 different alleles control a characteristic but neither is dominant, and both are fully expressed in the phenotypes.

1) In “shorthorn cattle”, the gene for coat colour shows co-dominance. Red and white coat colours produce “roan” – which contains some red hairs and some white hairs. Let R represent red and white represent W. Predict the phenotypic ratio of a cross between:

A red and a white shorthorn

A red and a roan shorthorn

A roan and a roan shorthorn