

## Incomplete Dominance Problems

1. In shorthorn cattle, when a **red bull (RR)** is crossed with a **white cow (WW)**, all the offspring are **roan (RW)**—a spotted. [4]


a. What offspring are expected from mating a **roan bull** and a **roan cow**?

b. What phenotypes would you expect from a cross between a red bull and a white cow?

Roan \_\_\_\_\_%    Red \_\_\_\_\_%    White \_\_\_\_\_%

2. In some chickens, the gene for feather color is controlled by incomplete dominance. The allele for **black** is **BB** and the allele for **white** is **WW**. The heterozygous phenotype is known as **erminette (BW)** (black and white spotted). [3]

a. What is the genotype for black chickens? \_\_\_\_\_

b. What is the genotype for white chickens? \_\_\_\_\_

c. What is the genotype for erminette chickens? \_\_\_\_\_

3. If two **erminette** chickens were crossed, what is the probability that: [4]

a. They would have a black chick? \_\_\_\_\_%

b. They would have a white chick? \_\_\_\_\_%

c. They would have a erminette chicks? \_\_\_\_\_%


4. A black chicken and a white chicken are crossed. What is the probability that they will have erminette chicks? \_\_\_\_\_% [2]


5. In snapdragons, flower color is controlled by incomplete dominance. The two alleles are red (RR) and white (WW). The heterozygous genotype is expressed as pink (RW). [4]

a. A pink-flowered plant (RW) is crossed with a white-flowered plant (WW). What is the probability of producing


pink-flowered plant? \_\_\_\_\_%

red-flowered plant? \_\_\_\_\_%

white-flowered plant? \_\_\_\_\_%

6. In Andalusian fowls, black individuals (BB) and white individuals (WW) are homozygous. A homozygous black bird is crossed with a homozygous white bird. The offspring are all bluish-gray. Show the cross as well as the genotypes and phenotypes of the parents and offspring. [4]


for offspring

a. Phenotype

Black \_\_\_\_\_%    White \_\_\_\_\_%    Bluish-gray \_\_\_\_\_%

b. Genotype

BB \_\_\_\_\_%    WW \_\_\_\_\_%    BW \_\_\_\_\_%

7. What results if two bluish-gray individual are crossed? Show the cross as well as the genotypes and phenotypes of the parents and offspring. [4]


for offspring

a. Phenotype

Black \_\_\_\_\_%    White \_\_\_\_\_%    Bluish-gray \_\_\_\_\_%

b. Genotype

BB \_\_\_\_\_%    WW \_\_\_\_\_%    RW \_\_\_\_\_%