Other Patterns Of Inheritance

Incomplete Dominance

1. Incomplete dominance is seen in snapdragons. The allele that causes red flowers (R) is not completely dominant over the allele that causes white flowers (W). When a plant is heterozygous for the trait of flower color (RW), pink flowers result. Cross two pink snapdragons, and provide the genotype and phenotype of all offspring. Show your work.

2. Using the information from #1, cross a red snapdragon with a pink snapdragon. Show your work.

Codominance

The best example of this is the human blood group. In human blood, 3 alleles exist (I^A , I^B , and i) which can result in four different phenotypes (A, B, AB and o). The alleles for A and B exhibit codominance with one another but are both dominant to i. Being homozygous i (ii) leads to blood type O.

1. A woman homozygous for type B blood marries a man who is heterozygous type A. What will be the possible genotypes and phenotypes of their children?

2. A man with type O blood marries a woman heterozygous type B blood. What will be the possible genotypes and phenotypes of their children?

3. A type A woman whose father was type B marries a type B man whose mother was type A. What will be their children's possible genotypes and phenotypes?