

Incomplete vs. Codominant alleles

Codominance:

Blood Type is controlled by 3 alleles: A, B, O. A & B are codominant, O is recessive. Knowing this, use a punnett square to solve the following problems. **YOU MUST SHOW WORK to receive credit.**

1. a) What are the two genotypes possible for a person who as A blood? _____
b) What genotype does a person with AB blood have? _____
c) What genotype does a person with O blood have? _____
d) What are the two genotypes possible for a person who as B blood? _____

2. A man with type AB blood is married to a woman also with type AB blood.

- What blood types will their children have and in what proportion? _____

3. A man has type B blood (genotype BB) is married to a woman with type O blood.

- What blood type will all their children have? _____
- What is the genotype of the children? _____

4. A woman with type A blood (genotype AO) is married to a type B person (genotype BO). What proportion of their children will have:

- A blood? _____
- B blood? _____
- AB Blood? _____
- O blood? _____

5. A woman with type A blood is claiming that a man with type AB blood is the father of her child who is also type AB.

- Could this man be the father of the child? _____
- Show the possible crosses; remember that the woman can have AA or AO genotypes.

6. A man with type AB blood is married to a woman with type O blood. They have two natural children and one adopted child. Jane has type A blood, Bobby has type B blood, and Grace has type O blood.

- Which child was adopted? _____

Incomplete Dominance:

3. In Smileys, eye shape can be starred, circular, or a circle with a star. Write the genotypes for the pictured phenotypes:



4. Show the cross between a star-eyed and a circle eyed.

- What are the phenotypes of the offspring? _____
- What are the genotypes? _____

5. Show the cross between a circle-star eyed, and a circle eyed.

- How many of the offspring are circle-eyed? _____
- How many of the offspring are circle-star eyed? _____

6. Show the cross between two circle-star eyed.

- How many of the offspring are circle-eyed? _____
- How many of the offspring are circle-star eyed? _____
- How many are star eyed? _____