Incomplete Dominance Worksheet 2

Sciencenotes.org

Monohybrid cross problems

1. A gene encoding pea plant color has been identified. The allele encoding blue (B) appears to be dominant over the recessive allele encoding yellow (b) plant color. The heterozygous phenotype is green.
a. What is the genotype for yellow peas? _____
b. What is the genotype of green peas? _____
c. What is the genotype of blue peas? _____

2. Using Question 1 as reference, if a blue pea plant and yellow pea plant are crossed:
a. What proportion of the offspring would be blue? _____%
b. What proportion of the offspring would be yellow? _____%
c. What proportion of the offspring would be green? _____%

3. Pea parents of unknown colors were crossed. Offspring produced included the following: 50 green plants and 50 yellow plants.
a. What is the genotype(s) of the parents? _____
b. What is the phenotype(s) of the parents? _____
c. What are the genotypes of the offspring? _____

4. Two pea plants of unknown colors were crossed. Offspring included 50 blue offspring, 50 yellow offspring, and 100 green offspring.
a. What is the genotype(s) of the parents? _____
b. What is the phenotype(s) of the parents? _____
c. What are the phenotypes of the offspring? _____
d. If this plant color trait was completely dominant (i.e., not incompletely dominant), what would the phenotypes of the offspring be, instead? _____

5. Using Question 1 as reference, answer the following:
a. What parental cross would produce the most green plants? _____
b. Which parental crosses would produce the least green plants?
_____
c. Which parental crosses would produce the highest diversity of plant offspring colors?
_____