

Heredity

1. What phenotypes did Mendel work with?

2. Define the following terms and concepts:
 - A. Principle of Segregation

 - B. Principle of Independent Assortment

Conditions of Principle of Independent Assortment:

- a.
- b.
- C. Dominant genes
 - a. Represented by _____ letters
- D. Recessive genes
 - a. Represented by _____ letters

Monohybrid Cross

3. Perform the following monohybrid crosses and write the genotypic and phenotypic ratios associated with each of the following crosses.
 - a. AA x aa

 - b. Aa x Aa

4. In flies, body color is represented by the letter "e". The wild-type body color is gray and the mutant phenotype is ebony. If a gray fly (which is heterozygous for the allele) and an ebony fly are crossed, what will be the resulting genotypes and phenotypes of the offspring?

Dihybrid Cross

5. The multiplication rule is used in 2 or more _____ events and the addition rule is used in 2 or more _____ events.
** "and" is used for multiplication rule and "or" is used for addition rule**

6. A rare species of llama has two genes that assort independently of each other during Meiosis. Gene "G" codes for eye color, where blue eyes are dominant to brown eyes. Gene "W" codes for fur color, where brown is dominant to white. Answer the following related to a cross between two llamas with the genotypes Ggww and GgWw.
- What is the probability that the offspring will have the genotype GgWw?
 - What is the probability that the offspring will be white with brown eyes? What about brown with blue eyes
7. Fill in the following chart with the appropriate Sex Chromosome systems.

Sex System	Male	Female	Animal Example	Heterogametic Sex
XX-XO system				
XX-XY system				
ZZ-ZW system				
Haplodiploidy system				
Genetic Balance System				