

## Genetics/Heredity Assignment

1. For each genotype below, indicate whether it is heterozygous (He) or homozygous (Ho).

Tt \_\_\_\_\_      BB \_\_\_\_\_      tt \_\_\_\_\_      Ff \_\_\_\_\_

2. Which of the genotypes in #1 would be considered purebred?

3. Which of the genotypes in #1 would be considered hybrids?

4. Determine the phenotype for each genotype.

Green pod color is dominant to yellow pod color in pea plants.

GG \_\_\_\_\_      Gg \_\_\_\_\_      gg \_\_\_\_\_

5. Determine the phenotype for each genotype.

Tall size is dominant to short size in pea plants.

TT \_\_\_\_\_      Tt \_\_\_\_\_      tt \_\_\_\_\_

**Cross a heterozygous free ear lobed parent (Ff) with another heterozygous free ear lobed parent (Ff).**

6. Fill in the punnet square correctly.


7. What are the possible genotypes?

8. What is the probability that an offspring will have free ear lobes?

9. What is the probability that an offspring will have attached ear lobes?

**Cross a homozygous parent with freckles (FF) with a heterozygous parent with freckles (Ff).**

10. Fill in the punnet square correctly.


11. What are the possible genotypes?

12. What is the probability that the offspring will have freckles?

13. What is the probability that the offspring will not have freckles?

**In mice, black eyes are dominant to red eyes. Cross the following parents:  
Bb x bb**

**B=black eyes**

**b=red eyes**

14. Fill in the punnet square correctly.


15. What percentage of mice will have red eyes?