**Punnett Practice**

**1.** Purple flowers (P) are dominant to white flowers (p). Perform the following crosses. For ***each*** cross, give the phenotype and genotype of all offspring.

**A.** PP x pp

**B.** PP x Pp

**2.** In pea plants, yellow seed color is dominant to green seed color. If a heterozygous pea plant is crossed with a plant that is

homozygous recessive for seed color, what is the probability that the offspring will have green seeds?

3. If all of the offspring of a particular cross have the genotype Gg, what must the genotype of the parents be?

4. A homozygous dominant brown mouse is crossed with a heterozygous brown mouse (tan is the recessive color).

5. Red eyes (R) in fruit flies are dominant over white eyes (r). Using Punnett squares, find the possible eye colors of the children for ***each*** of the following crosses. Give their phenotype and genotype probabilities.

**A.** Rr x rr

**B**. rr x RR

6. The result of a cross is 3 purple flowers and 1 white flower. Using a cross, determine whether the parent plant with purple flowers is heterozygous (Pp) or homozygous dominant (PP).

7. C is for curly hair and c is for straight hair. A homozygous curly hair person and a homozygous straight hair person cross.

 **A.** What is the offspring genotype and phenotype?

 **B.** How many offspring would be homozygous and heterozygous?

8. S is for solid color and s is for stripes. A heterozygous cat would be\_\_\_\_\_\_\_\_\_\_\_ and if crossed with another cat that is also heterozygous…..

 **A.** What is the offspring genotype and phenotype?

9. D is for no dimples and d is for dimples. A homozygous dominant person is crossed with a heterozygous person…

 **A.** What is the offspring genotype and phenotype?

10. J is for regular jointed and j is for double jointed. A heterozygous person is crossed with a homozygous recessive person……

 **A.** What is the offspring genotype and phenotype?

11. If H is for no hooked nose and h is for hooked nose and I crossed a homozygous recessive person with a other homozygous recessive person….

 **A.** What is the offspring genotype and phenotype?

12. E is for extra finger and e is for no extra finger. If a person is born with an extra finger is crossed with another person with an extra finger, what are the possible outcomes?

13. Hornless (H) in cattle is dominant over horned (h). A homozygous hornless bull is mated with a homozygous horned cow. What will be the genotype and phenotype of the offspring?

14. In tomatoes, red fruit (R) is dominant over yellow fruit (r). A plant that is homozygous for red fruit is crossed with a plant that has yellow fruit. What would be the genotypes and phenotypes of parents and offspring?

15. In humans, being a tongue roller (R) is dominant over non-roller (r). A man who is a non-roller marries a woman who is heterozygous for tongue rolling.

 Father’s phenotype \_\_\_\_\_\_\_\_ Mother’s phenotype \_\_\_\_\_\_\_\_\_

 Father’s genotype \_\_\_\_\_\_\_\_ Mother’s genotype \_\_\_\_\_\_\_\_\_

 What is the probability of this couple having a child who is a tongue roller? \_\_\_\_\_\_\_\_

16. Brown eyes in humans are dominant to blue eyes. A brown-eyed man, whose mother was blue-eyed, marries a brown-eyed woman whose father had blue eyes. What is the probability that this couple will have a blue-eyed child? \_\_\_\_\_\_\_

17. A blue cat is crossed with a green cat (yellow is recessive). What are the phenotypes and genotypes of the offspring if using incomplete dominance?

18. A red flower is crossed with a blue flower. What are the phenotypes and genotypes of the offspring if co-dominant?