

Name: _____

Period: _____

Punnett Square Practice

Part A: Vocabulary - Match the definitions on the left with the terms on the right.

- | | |
|--|-----------------|
| _____ 1. genotypes made of the same alleles | A. alleles |
| _____ 2. different forms of genes for a single trait | B. dominant |
| _____ 3. gene that is always expressed | C. heterozygous |
| _____ 4. gene that is expressed only in the homozygous state | D. homozygous |
| _____ 5. genotypes made of two different alleles | E. recessive |

Circle the choices that are examples of each of those vocabulary words.

6. **Homozygous dominant** AA Gg KK mm uu Rr TT

7. **Homozygous recessive** ee Ff HH Oo qq Uu ww

8. Genotypes in which **dominant gene** must show

AA Dd EE ff Jj RR Ss

9. Genotypes in which **recessive gene** must show

aa Gg Ff KK rr Oo Tt

Part B: Punnett Squares

10. Examine the following Punnett squares and circle those that are correct.

	D	d
d	Dd	dd
d	Dd	dd

	D	D
d	Dd	DD
d	Dd	Dd

	A	a
A	AA	aa
a	Aa	Aa

	A	a
a	Aa	aa
a	Aa	aa

11. What do the letters on the outside of the Punnett square stand for?

12. What do the letters on the inside of the Punnett square stand for?

13. In corn plants, normal height, N, is dominant to short height, n. **Complete these four Punnett squares showing different crosses. Then, circle all of the homozygous dominant offspring. Put an X through all the heterozygous offspring. Leave all the homozygous recessive offspring unshaded.**

	N	N
n		
n		

	N	n
N		
N		

	N	n
N		
n		

	N	n
n		
n		

14. In guinea pigs, short hair, S, is dominant to long hair, s. **Complete the following Punnett squares according to the directions given. Then, fill in the blanks beside each Punnett square with the correct numbers.**

- a. One guinea pig is Ss and one is ss.
 Expected number of offspring:
 _____ Short hair (SS or Ss)
 _____ Long hair (ss)

- b. Both guinea pigs are heterozygous for short hair.
 Expected number of offspring:
 _____ Short hair
 _____ Long hair

Part C: Monohybrid Cross Problems – Use the Punnett Square to show your work.

15. 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?**

Genotype

Phenotype

16. 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 will be the genotype and phenotype of the offspring?**

Genotype

Phenotype

17. 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?
