KEY

Punnett Square Practice Worksheet

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

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

A. alleles
B. dominant
C. heterozygous
D. homozygous
E. recessive

Circle the choices that are examples of each of those 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?

parents alleles

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

offspring alleles.

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	Nn	Nn
n	Nn	Nn

	N	n
N	NN	Nn
N	NN	Nn

	N	n
N	NN	Nn
n	Nn	nn

	N	n
n	Nn	nn
n	Nn	nn

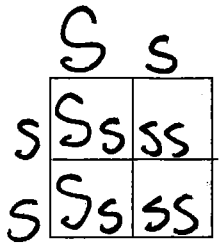
14. In guinea pigs, short hair, S, is dominant to long hair, s. Complete the following Punnett squares according to the directions given. Then, fill in the blanks beside each Punnett square with the correct numbers.

a. One guinea pig is Ss and one is ss.

Expected number of offspring:

2 Short hair (SS or Ss)

2 Long hair (ss)

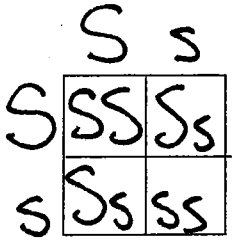


b. Both guinea pigs are heterozygous for short hair.

Expected number of offspring:

3 Short hair

1 Long hair

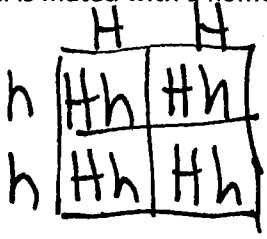


Part C: Monohybrid Cross Problems – Make a punnett square to show your work.

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 heterozygous

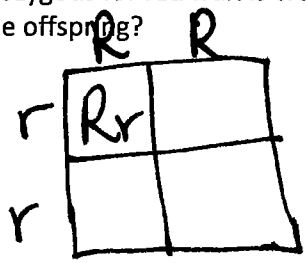
Phenotype dominant/hornless



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 heterozygous

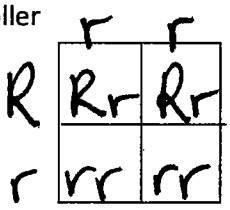
Phenotype dominant/red



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.

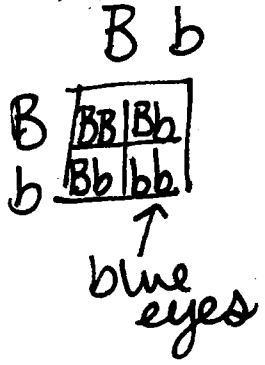
Father's phenotype recessive Mother's phenotype dominant

Father's genotype rr Mother's genotype Rr



What is the probability of this couple having a child who is a tongue roller? 50%

18. 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? 25%



Answer the following questions by completing the punnett square.