

Name: _____

Date: _____

Life Science

Period: _____

Genetics

punnett square practice

1. Let's say that in seals, the gene for the length of the whiskers has two alleles. The dominant allele (W) codes long whiskers and the recessive allele (w) codes for short whiskers.

a. What is the probability of producing offspring that have short whiskers from a cross of two long-whiskered seals, one that is homozygous dominant and one that is heterozygous? Show your work on the punnett square.

_____ % long whiskers

_____ % short whiskers

b. If one parent seal is a heterozygous long-whisker and the other is short-whiskered, what is the probability that the offspring will have short whiskers?

_____ % long whiskers

_____ % short whiskers

2. In purple people eaters, one horn (H) is dominant and no horns (h) is recessive. Complete the punnett square to show the cross of two hybrid purple people eaters. Summarize the genotypes and phenotypes of the possible offspring.

Possible genotypes of offspring:

Possible phenotypes of offspring:

4. Set up the Punnet squares for each of the crosses listed below.
Round seeds are dominant to wrinkled seeds.

Rr x rr

What percentage of the offspring will be round? _____

RR x rr

What percentage of the offspring will be round? _____

RR x Rr

What percentage of the offspring will be round? _____

Rr x Rr

What percentage of the offspring will be round? _____

Practice with Crosses.

Show all work!

5. A TT (tall) plant is crossed with a tt (short plant).

What percentage of the offspring will be tall? _____

6. A Tt plant is crossed with a Tt plant.

What percentage of the offspring will be short? _____

7. A heterozygous round seeded plant (Rr) is crossed with a homozygous round seeded plant (RR).

What percentage of the offspring will be homozygous (RR)? _____

8. A homozygous round seeded plant is crossed with a homozygous wrinkled seeded plant.

What are the genotypes of the parents?
_____ x _____

What percentage of the offspring will also be homozygous? _____

9. In pea plants purple flowers are dominant to white flowers.

If two white flowered plants are cross, what percentage of their offspring will be white flowered? _____

10. A white flowered plant is crossed with a plant that is heterozygous for the trait.

What percentage of the offspring will have purple flowers? _____

11. Two plants, both heterozygous for the gene that controls flower color are crossed.

What percentage of their offspring will have purple flowers? _____

What percentage will have white flowers? _____

12. In guinea pigs, the **allele for short hair is dominant**.

What genotype would a heterozygous short haired guinea pig have? _____

What genotype would a purebreeding short haired guinea pig have? _____

What genotype would a long haired guinea pig have? _____

13. Show the cross for a pure breeding short haired guinea pig and a long haired guinea pig.

What percentage of the offspring will have short hair? _____

14. Show the cross for two heterozygous guinea pigs.

What percentage of the offspring will have short hair? _____

What percentage of the offspring will have long hair? _____

15. Two short haired guinea pigs are mated several times. Out of 100 offspring, 25 of them have long hair. What are the probable genotypes of the parents?

_____ x _____

Show the cross to prove it!