

Name: _____

Genetics Practice Problems



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

AA _____

Bb _____

Cc _____

Dd _____

Ee _____

ff _____

GG _____

HH _____

Ii _____

Jj _____

kk _____

Ll _____

Mm _____

nn _____

OO _____

Pp _____

2. For each of the **genotypes** below determine what **phenotypes** would be possible.

Purple flowers are dominant to white

PP _____

Pp _____

pp _____

Brown eyes are dominant to blue

BB _____

Bb _____

bb _____

Round seeds are dominant to wrinkled

RR _____

Rr _____

rr _____

Bobtails are recessive (to long tails)

TT _____

Tt _____

tt _____

3. For each **phenotype** below, list the **genotypes** (remember to use the letter of the dominant trait)

Straight hair is dominant to curly

_____ straight

_____ straight

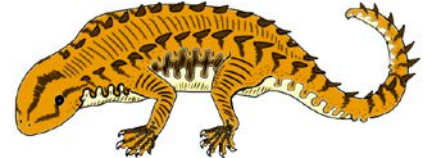
_____ curly

Tail spikes are dominant to plain tails

_____ spikes

_____ spikes

_____ plain



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

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. Show the cross of a Tt plant and a Tt plant.

What percentage of the offspring will be short? _____

What percentage is tall? _____

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? _____

What is the genotype of all of the offspring? _____



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

Two white flowered plants are crossed...

What percentage of their offspring will have white flowers? _____

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? _____

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? _____

