Name:_____

Genetics Practice Problems

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

AA _____	Ee _____	Ii _____	Mm _____
Bb _____	ff _____	Jj _____	nn _____
Cc _____	GG _____	kk _____	OO _____
Dd _____	HH _____	Ll _____	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 _____

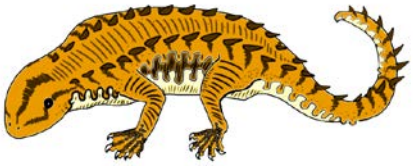
3. For each **phenotype** below, list the **genotypes** (remember to use the letter of the dominant trait)

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? _____