

Genetics Practice Problems - Simple Worksheet

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

AA _____	Ee _____	li _____	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 flowers.

PP _____

Pp _____

pp _____

Round seeds are dominant to wrinkled seeds.

RR _____

Rr _____

rr _____

Brown eyes are dominant to blue eyes

BB _____

Bb _____

bb _____

Bobtails in cats are recessive.

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. Pointed heads are dominant to round heads.

_____ straight

_____ pointed

_____ straight

_____ pointed

_____ curly

_____ round

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

$Rr \times rr$

What percentage of the offspring will be round?

 $RR \times rr$

What percentage of the offspring will be round?

 $RR \times Rr$

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 $Rr \times Rr$

What percentage of the offspring will be round?

SHOW ALL WORK!

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!