

Name _____ Date _____ Period _____

Worksheet: Mendel and Genetic Crosses

BIOLOGY: CHAPTER 6

Directions: Answer the following questions using your notes and textbook (pages 166-197)

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 _____

Bobtails in cats are recessive.

TT _____

Tt _____

tt _____

Brown eyes are dominant to blue eyes

BB _____

Bb _____

bb _____

Round seeds are dominant to wrinkled seeds

RR _____

Rr _____

rr _____

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

Straight hair is dominant to curly.

_____ straight

_____ curly

Pointed heads are dominant to round heads.

_____ pointed

_____ round

Long tails are dominant over short tails.

_____ long tail

_____ short tail

Long hair is dominant over short hair.

_____ long hair

_____ short hair

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 percent of the offspring will be round?

RR x Rr
What percent of the offspring will be round?

Rr x Rr
What percent of the offspring will be round?

Practice with Crosses. Show all work! 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!**