

Name: **KEY**

Period:

Genetics Review Worksheet – Unit Test on Wednesday or Thursday

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

AA <u> Ho </u>	Ee <u> He </u>	Ii <u> He </u>	Mm <u> He </u>
Bb <u> He </u>	ff <u> Ho </u>	Jj <u> He </u>	nn <u> Ho </u>
Cc <u> He </u>	Gg <u> He </u>	kk <u> Ho </u>	oo <u> Ho </u>
DD <u> Ho </u>	HH <u> Ho </u>	LL <u> Ho </u>	Pp <u> He </u>

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

Purple flowers are dominant to white flowers.

PP **Purple**
Pp **Purple**
pp **White**

Round seeds are dominant to wrinkled seeds.

RR **Round**
Rr **Round**
rr **Wrinkled**

Brown eyes are dominant to blue eyes

BB **Brown**
Bb **Brown**
bb **blue**

Bobtails in cats are recessive.

TT **Long tail**
Tt **Long tail**
tt **Bob tail (short)**

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

Straight hair is dominant to curly.

 Ss straight
 Ss straight
 ss curly

Pointed heads are dominant to round heads.

 PP pointed
 Pp pointed
 pp round

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

Rr x rr

	r	r
R	Rr	Rr
r	rr	rr

What percentage of the offspring will be round? 50% round

RR x rr

	r	r
R	Rr	Rr
R	Rr	Rr

What percentage of the offspring will be round? 100% round

RR x Rr

	R	r
R	RR	Rr
R	RR	Rr

What percentage of the offspring will be round? 100% Round

Rr x Rr

	R	r
R	RR	Rr
r	Rr	rr

What percentage of the offspring will be round? 75% 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? 100%

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

What percentage of the offspring will be short? 25%

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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)? 50%

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

What are the genotypes of the parents? RR x rr

What percentage of the offspring will also be homozygous? 0%

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? 100%

pp x pp

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? 50%

pp x Pp

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

What percentage of their offspring will have purple flowers? 75%

What percentage will have white flowers? 25%

Pp x Pp

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

What genotype would a heterozygous short haired guinea pig have?

Ff _____

What genotype would a purebreeding short haired guinea pig have?

FF _____

What genotype would a long haired guinea pig have? **ff** _____

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? **0%** _____

FF x ff

14. Show the cross for two heterozygous guinea pigs.

Ff x Ff

What percentage of the offspring will have short hair? **100%** _____

What percentage of the offspring will have long hair? **0%** _____

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?

Ff _____ x **Ff** _____

Show the cross to prove it!