Genetics Practice Problems Worksheet

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

AA Ho	Ee He	Ii He	Mm He
Bb <u>He</u>	ff Ho	Jj <u>He</u>	nn <u>Ho</u>
Cc He	Gg He	kk Ho	00 <u>Hb</u>
DD Ho	HH Ho	LL_(to	Рр Не

- 2. For each of the **genotypes** below determine what **phenotypes** would be possible.
 - a. Purple flowers are dominant to white flowers.
 - · PP Purple
 - · Pp Purple
 - · pp white
 - b. Round seeds are dominant to wrinkled seeds.
 - · RR Round
 - · Rr Round
 - · m. Wrinkled

- c. Brown eyes are dominant to blue eyes
 - · BB Brown
 - · Bb Brown
 - · bb Blue
- d. Bobtails in cats are recessive.
 (long tails are dominant)
 - · TT long tail
 - · It long tail
 - · tt hah tail
- 3. For each phenotype below, list the **genotypes**
 - a. Straight hair is dominant to curly.
 - SS straight
 - Ss straight
 - <u>SS</u> curly

- b. Pointed heads are dominant to round heads.
 - PP pointed
 - Pointed
 - pp round

Name:				
vainc.	Name.			
	vaille.			

Set up the Punnet squares for each of the crosses listed below.

Round seeds are dominant to wrinkled seeds.

- 4. Rr x rr
 - a. What are the different kinds of gametes these parents can produce? K, r, r, r
 - b. Make a punnett square

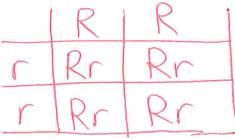


c. What percentage of the offspring will be round?

50%

5. RR x rr

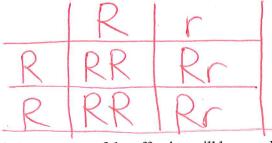
- a. What are the different kinds of gametes these parents can produce?
- b. Make a punnett square



c. What percentage of the offspring will be round?

100%

- 6. RR x Rr
 - a. What are the different kinds of gametes these parents can produce?
 - b. Make a punnett square



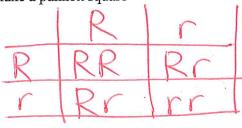
c. What percentage of the offspring will be round?

100%

7. RrxRr

What are the different kinds of gametes these parents can produce?

b. Make a punnett square

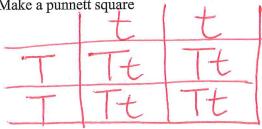


c. What percentage of the offspring will be round?

8. A TT (tall) plant is crossed with a tt (short plant).

a. What are the different kinds of gametes these parents can produce? __

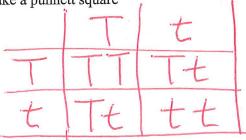
b. Make a punnett square



c. What percentage of the offspring will be tall?

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

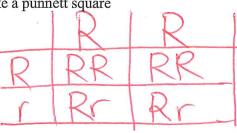
b. Make a punnett square



c. What percentage of the offspring will be short?

10. A heterozygous round seed plant (Rr) is crossed w/ a homozygous round seed plant (RR).

- a. What are the different kinds of gametes these parents can produce? $R_1 r_1 R_2$
- b. Make a punnett square

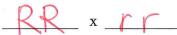


c. What percentage of the offspring will be homozygous (RR)?



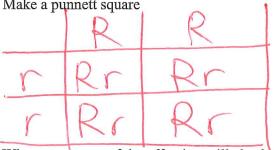
11. A homozygous round seeded plant is crossed with a homozygous wrinkled seeded plant.

a. What are the genotypes of the parents? _____ x ___ r



What are the different kinds of gametes these parents can produce?

Make a punnett square



d. What percentage of the offspring will also be homozygous?

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 purebred short haired guinea pig have?



What genotype would a long haired guinea pig have? _\$\s\s\s\\$

13. Show the cross for a pure breeding short haired guinea pig and a long haired guinea pig.

e Ss Ss		S	S
e Ss Ss	S	Ss	Ss
	S	Ss	Ss

a. What percentage of the offspring will have short hair?

14. Show the cross for two heterozygous guinea pigs.



a. What percentage of the offspring will have short hair?



b. What percentage of the offspring will have long hair?

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)	1)	/	C
		_	-	

	S	S
S	SS	Ss
S	Ss	22

		4
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