Name _____ Date _____ Period _____

Genetics Practice Problems #1

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

AA_____	Ee_____	Ii_____	Mm_____	Pp_____
Bb_____	ff_____	Jj_____	nn_____	LL_____
Cc_____	Gg_____	kk_____	oo_____	HH_____

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

Purple flowers are dominant to **white** flowers

PP_____

Pp_____

pp_____

Brown eyes are dominant to **blue** eyes

BB_____

Bb_____

bb_____

Round seeds are dominant to wrinkled seeds

RR_____

Rr_____

rr_____

Bobtails in cats are recessive

TT_____

Tt_____

tt_____

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

Straight hair is dominant to curly

_____ Straight

_____ Straight

_____ Curly

Pointed heads are dominant to round heads

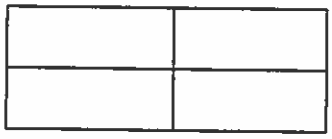
_____ Pointed

_____ Pointed

_____ Round

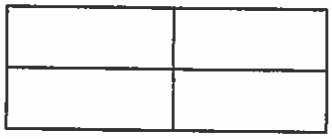
4. Set up the Punnett squares for each of the crosses listed below. ***Round seeds*** *are dominant to* ***wrinkled seeds.***

Rr x rr



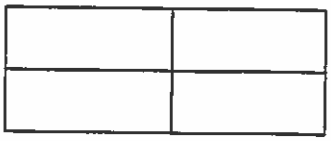
What percentage of the offspring will be round?_____

RR x rr



What 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. 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? _____

Name: _____

Date: _____ Period: _____

Punnett Square Worksheet 1

Directions: *Read each problem carefully. Make a "key" for the trait, identify the parents involved in the cross and the gametes each parents produces. Show the Punnett square and give the ratio of both genotype and phenotype.*

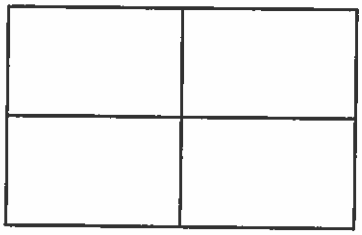
Before you begin....Define the following terms from your notes...

- Homozygous
- Heterozygous
- Phenotype
- Genotype
- Dominant
- Recessive

1. In rabbits, black fur is dominant over white fur. Show the cross of a heterozygous black male with a homozygous white female.

Key:

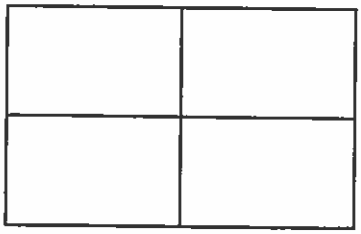
Parents & Gametes:



2. Tall is dominant over short in pea plants. Show the cross of a homozygous short plant is crossed with a homozygous tall plant.

Key:

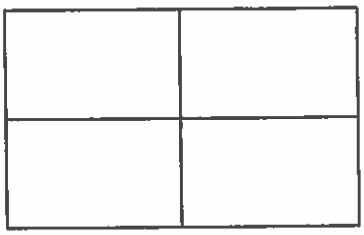
Parents & Gametes:



3. In humans, free-ear lobes are dominant to attached. Two parented that are both heterozygous free are expecting a child. What are the chances that the child will have free ear lobes of attached?

Key:

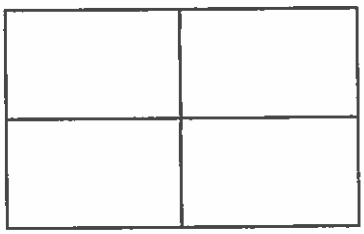
Parents & Gametes:



4. Wrinkled seed are recessive to smooth seeds. Show a plant that always produces wrinkled seeds crossed with a heterozygous smooth seeds producing plant.

Key:

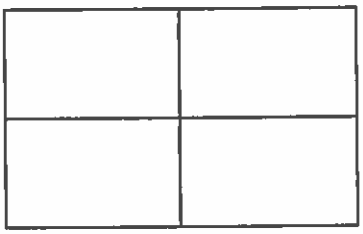
Parents & Gametes:



5. As in the previous problem… Show a heterozygous smooth plant crossed with another heterozygous smooth seed producing plant.

Key:

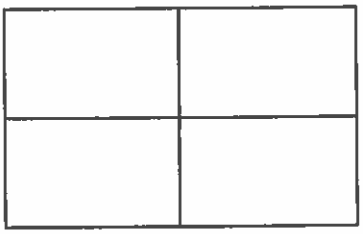
Parents & Gametes:



6. Blue eyes are dominant to red eyes in rabbits. Show a heterozygous blue-eyed rabbit crossed with a red-eyed rabbit.

Key:

Parents & Gametes:



7. In fruit flies, red eyes are dominant over white eyes. Show a cross between two white-eye fruit flies.

Key:

Parents & Gametes: