Name _____ Date _____

Warm-Up: Punnet Square and Test Cross

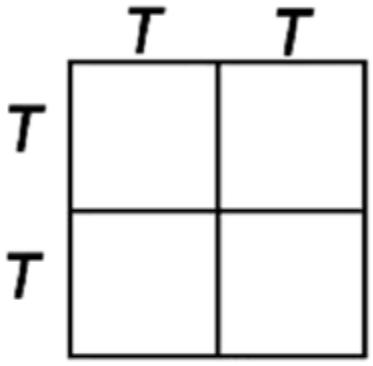
Punnett's Squares

These show the 2 alleles of each parent plant crossed with each other and the resulting 4 possible offspring with T = tall, t = short.

TT = homozygous dominant; tt = homozygous recessive; Tt = heterozygous

TT = dominant tall (genotype tall, phenotype tall)
Tt = mixed hybrid (genotype hybrid, phenotype tall)
tt = recessive short (genotype short, phenotype short)

Using the Punnett's Squares below, name the offspring of all possible parent combinations.



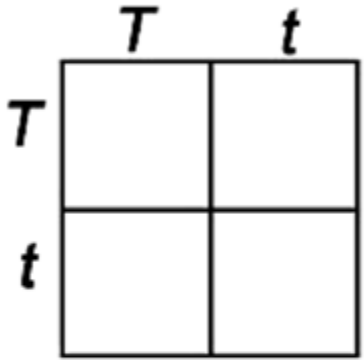
Both parents are homozygous dominant.

Phenotypic ratio: _____

_____

Genotypic ratio: _____

_____



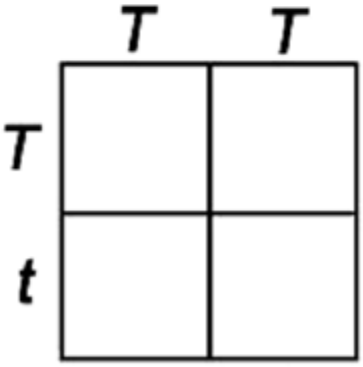
Both parents are heterizygous (hybrids).

Phenotypic ratio: _____

_____

Genotypic ratio: _____

_____



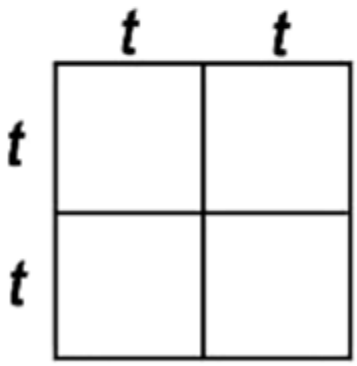
One parent is homozygous dominant; the other a hybrid.

Phenotypic ratio: _____

_____

Genotypic ratio: _____

_____



Both parents are homozygous recessive.

Phenotypic ratio: _____

_____

Genotypic ratio: _____

Probability Practice Problems:

Problem: A chicken with single comb **SS** is crossed with a chicken with pea comb **ss**.

1. What percentage of the offspring will have single combs? _____


Single-comb

2. An **Ss** chicken is crossed with another **Ss** chicken. What percentage of the offspring will have pea combs? _____


Pea comb

3. A heterozygous yellow seeded plant (**Yy**) is crossed with a homozygous yellow seeded plant (**YY**).
   What percentage of the offspring will be homozygous (**YY**)? _____
   What percentage of the offspring will be heterozygous (**Yy**)? _____

4. A ***homozygous*** yellow seeded plant is crossed with a ***homozygous*** green seeded plant.

   What are the **genotypes** of the parents?
   _____ x _____

What percentage of the offspring will also be homozygous? _____