Honors Biology Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

NDHS Per: \_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_

**Dihybrid Genetics**

**Dihybrid Cross**: study of the inheritance of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Complications**:

Number of possible gametes \_\_\_\_\_\_\_\_\_\_\_

Number of Possible Gametes = \_\_\_\_ where “n” = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Monohybrid = \_\_\_ = \_\_\_ possible gametes

Dihybrid = \_\_\_ = \_\_\_ possible gametes

Trihybrid = \_\_\_ = \_\_\_ possible gametes

Tetrahybrid = \_\_\_ = \_\_\_ possible gametes

A Homozygous Tall, Purple flowered pea plant is crossed with a Homozygous short, white flowered pea plant

KEY:

P Generation

-

Gametes:

F1 Genotypes:

F1 Gametes:

Genes separate in meiosis (Law of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

OR

Dihybrid Genotype results in

Expands the Punnett to a

**FOIL the Gametes:**

TtPp

First =

Outer =

Inner =

Last =

Possible gametes for: TTPp =

TtPP =

ttPp =

**Dihybrid Cross**

tp

Tp

tP

TP

Tp

tP

tp

TP

**Genotypic Ratio:**

**Phenotypic Ratio: Example Problems:**

A new species of spider was discovered in the boiler room of NDHS. These spiders either have large hairy bodies or small smooth bodies. They can also have red legs or brown legs. Extensive genetic research has shown that hairy bodies are dominant over smooth and brown legs are dominant over red.

If a smooth bodied male with brown legs (heterozygous) mates with a hairy bodied female (heterozygous) with red legs, what would the expected offspring look like?

If a purebred hairy bodied, red legged male spider is mated with a female that is heterozygous for both traits, how many offspring would be expected to have hairy bodies and red legs?