Honors Biology Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
NDHS Per: \_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_

**Probability and Genetics**

Flipping Coins

Heads vs. Tails

Probability of Getting Heads =

Probability of Getting Tails =

Corresponds to Sorting of Gametes

Tt = 50% of getting T and 50% of getting t

Calculating Multiple Probabilities

* **Rule of Multiplication**:

Ex: Tt x Tt

The probability of getting TT

Probability of T =   
Probability of T =

Total Probability =

* Probability of tt =
  + - ½ x ½ =
* Probability of Tt
  + - WHY?

|  |  |
| --- | --- |
|  |  |
|  |  |

**Rule of Addition:**

* Cross: TT x tt
  + Probability of Tt:
* Cross: Tt x tt
  + Probability of Tt
  + Probability of tt
  + Probability of TT

**Multiple Genes: Dihybrid and beyond**

* Find the individual probability of each gene pair and multiply all together.
* Cross: AaBb X AABb
  + Probability ofAaBB:
    - Probability of Aa =
    - Probability of BB =
    - Total Probability of AaBB= ½ x ¼ =

Cross AaBb x AaBb

* + Probability of AaBb
    - Probability of Aa =
    - Probability of Bb =
    - Probability of AaBb =
* Probability of AABB
* Probability of Aabb
* Cross AaBBCc x AABbCc
  + Probability of AABBCC
  + Probability of AaBbCc
  + Probability of AAbbCC