Name:_____**Date**_____**Period**_____Bio K/H

<u>Day 2: Non-Mendelian</u> Incomplete Dominance *<u>Exceptions</u> to the Mendel Rule*

Notes:
Incomplete Dominance

A. A cross between organisms with _____ _____ phenotypes
   Ex: Red x White
B. Produce offspring with a _____ phenotype that is a _____ of the parental traits Ex: Pink is a **blend** of red & white
C. EXAMPLE: If a homozygous _____ flowered snap dragon plant (RR) is crossed with a homozygous _____ flowered snap dragon plant (WW), all of the F1 offspring will have _____ flowers.
   1. **<u>RED</u>** flower x **<u>WHITE</u>** flower → **<u>PINK</u>** flower
      **be careful- notice that the alleles are ALL capitalized*
D. The _____ of _____ individuals is _____ (in the middle) between those of two homozygotes

Sample Problem:

In another flower, if **red (RR)** and **blue (BB)** flowers are crossed, they produce a 3rd **purple (RB)** flower

What would be the genotype ratio and phenotype ratio if you **crossed two purple** flowers?

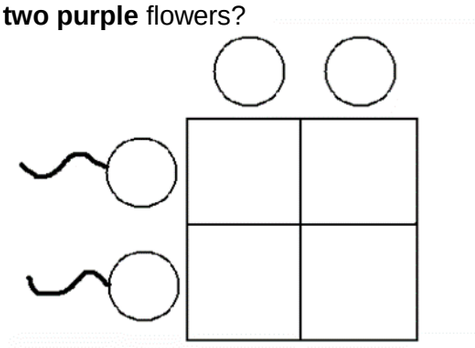
Cross of two purple flowers (parents) _____ X _____

What are gamete possibilities?

Genotype ratio: _____

Phenotype ratio: _____

Can you have a heterozygous red or hybrid blue flower? _____



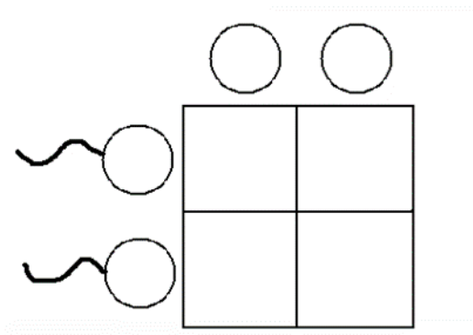
Section 1: <u>Incomplete dominance in four-o'clocks</u> - When a four-o'clock plant homozygous for red flowers is crossed with one homozygous for white flowers, all of the offspring bear pink flowers. Cross a homozygous red flowered plant with a homozygous white flower plant.

1. Key:

2. Parents:

4. Genotype:

5. Phenotype:



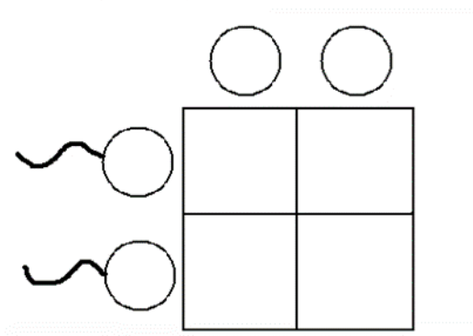
What is the genotype of the F_2 generation from the problem above?

1. Key:

2. Parents:

4. Genotype:

5. Phenotype:



Explain how the red or white variety of four-o'clocks is maintained: _____

_____

_____

Section 2: <u>Practice Incomplete Dominance</u> – show all work.

1. In noses, dry nostrils are incompletely dominant to runny nostrils. A cross will result in a slimy nostril.
   a. Cross a slimy nostril with a dry nostril.

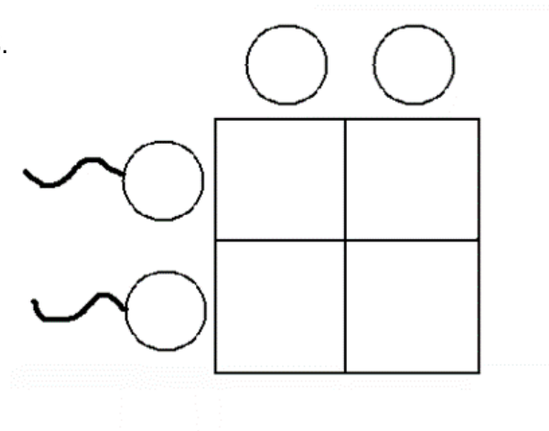
1. Key:

2. Parents:

4. Genotype:

5. Phenotype:

3.



   b. Cross a dry nostril with a runny nostril.

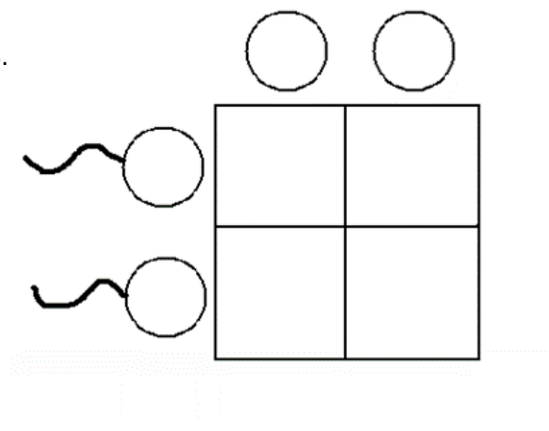
1. Key:

2. Parents:

4. Genotype:

5. Phenotype:

3.



   c. Cross two slimy nostrils.

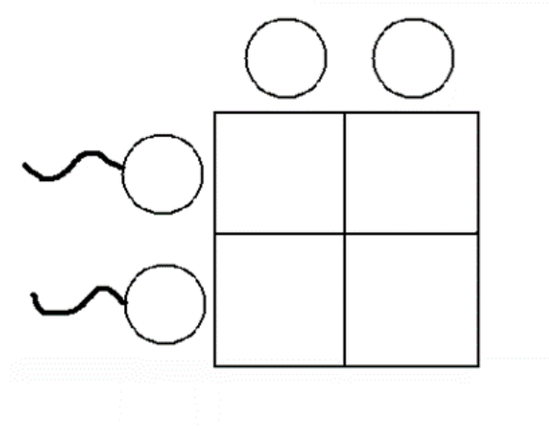
1. Key:

2. Parents:

4. Genotype:

5. Phenotype:

3.

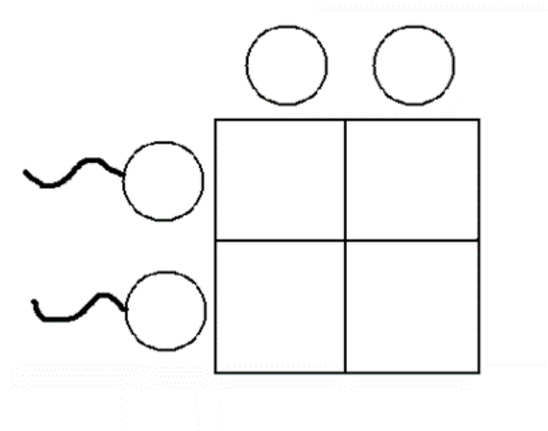


2. In people, happy people are incompletely dominant to sad people. A cross between the happy and sad people results in a grumpy person. Cross two grumpy people.

1. Key:

2. Parents:

4. Genotype:

5. Phenotype:

3.