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

**Bimbleflick Breeding**

Professor Sibelius Flinglehorn has decided to breed bimbleflicks in order to sell them as pets. He has set up breeding pairs and is looking to find the best looking offspring from the breeding program.

Directions: Find a person who has a Bimbleflick with the opposite gender as yours. Write the genotypes of each bimbleflick below.

 Make a Key for each cross.

**Bimbleflick Male**

Gender Hair Color Type Feet Eye Brow Shape Arms Skin Darkness Color

**Bimbleflick Female**

Gender Hair Color Type Feet Eye Brow Shape Arms Skin Darkness Color

**Cross #1**: Determine the phenotypes of the offspring for hair color.

Can any of the offspring form a purebred for either of the hair color traits? What is the probability?

What type of inheritance pattern is this?

**Cross #2**: Determine the phenotypes of the offspring for hair type.

Can any of the offspring form a purebred for either of the hair type traits? What is the probability?

What type of inheritance pattern is this?

**Cross #3**: Determine the phenotypes of the offspring for feet.

Can any of the offspring form a purebred for either of the feet traits? What is the probability?

What type of inheritance pattern is this?

**Cross #4**: Determine the phenotypes of the offspring for eye shape.

Can any of the offspring form a purebred for either of the eye shape traits? What is the probability?

What type of inheritance pattern is this?

**Cross #5**: Determine the phenotypes of the offspring for eye brows. This is also dependent on gender therefore it is a dihybrid cross.

What is the probability of forming a purebred uni-browed female?

What type of inheritance pattern is this?

**Cross #6**: Determine the phenotypes of the offspring for arm length.

Can any of the offspring form a purebred for medium arm length? Explain.

What type of inheritance pattern is this?

**Cross #7**: Determine the phenotypes of the offspring for skin darkness.

What is the probability of obtaining the darkest colored bimbleflick possible?

What type of inheritance pattern is this?

**Cross #8**: Determine the phenotypes of the offspring for skin color.

Can any of the offspring form a purebred for either yellow? What is the probability?

What type of inheritance pattern is this?

**Probability Calculations**: Use probability to calculate the likelihood of your bimbleflicks producing offspring that show the following traits.

1. Male with green, curly hair.
2. Female with hairless feet and short arms.
3. An oval eyed and extremely light blue skin
4. A straight, purple haired male with long arms, blue and red stripes, and a uni-brow?