Bikini Bottom Genetics #1 Name _____

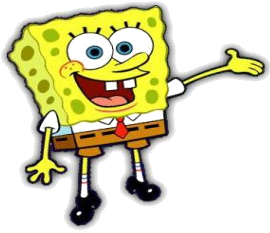
Scientists at Bikini Bottom have been investigating the genetic makeup of the organisms in this community. Use the information provided and your knowledge of genetics to answer each question.

1. For each genotype below, indicate whether it is a heterozygous (He) OR homozygous (Ho).

TT _____ Bb _____ DD _____ Ff _____ tt _____ dd _____

Dd _____ ff _____ Tt _____ bb _____ BB _____ FF _____

Which of the genotypes in #1 would be considered *purebred*? _____



Which of the genotypes in #1 would be *hybrids*? _____

2. Determine the phenotype for each genotype using the information provided about SpongeBob.

Yellow body color is dominant to blue.

YY _____ Yy _____ yy _____

Square shape is dominant to round.

SS _____ Ss _____ ss _____

3. For each phenotype, give the genotypes that are possible for Patrick.

A tall head (T) is dominant to short (t).

Tall = _____ Short = _____

Pink body color (P) is dominant to yellow (p).

Pink body = _____ Yellow body = _____

Vocabulary fill in the blank:

The study of how organisms inherit different features from their parents is called _____. In this study, scientists focus on a characteristic or _____of an organism such as height and use the information to predict what the organism's children will be like. If the height characteristic has two different forms (tall and short) then it has two _____. Many times one of these forms of the gene is more powerful than the other so it is called the _____ allele. The form of the gene that gets covered by the uppercase is the _____ allele. Letters of the alphabet are chosen to symbolize characteristics such as the letter "t" or "T" for the height gene. It may seem odd to choose "t" for the height gene but most geneticists choose a letter that symbolizes the dominant form of the gene ("T" for tall in this case). Organisms inherit a gene from each of their parents and the two letter combination represents the organism's types of genes or _____. If the inherited letters are both lowercase or uppercase (hh or HH) then the organism has a _____ genotype. One lowercase letter and one uppercase letter combine for a _____ genotype. Your genes determine how you develop and this can sometimes be physically seen in your _____.

Word Bank: Allele, Dominant, Genetics, Genotype, Heterozygous, Homozygous, Phenotype, Recessive, Trait