Bikini Bottom Genetics Name _____

Scientists at Bikini Bottoms 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 (different) (He) OR homozygous (same) (Ho).

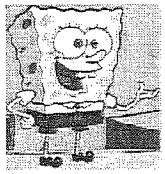
TT ____ Bb ____ DD ____ Ff____ tt ____ dd ____

Dd ____ ff ____ Tt ____ bb ____ BB ____ FF ____

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

Which of the genotypes in #1 would be hybrid? _____

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 = _____

4. SpongeBob SquarePants recently met SpongeSusie Roundpants at a dance. SpongeBob is heterozygous for his square shape, but SpongeSusie is round. Create a Punnett square to show the possibilities that would result if SpongeBob and SpongeSusie had children. HINT: Read question #2!

A. Genotype Ratio: _____ SS: _____ Ss: _____ ss

Phenotype Ratio: ____ Square: _____Round

B. What are the chances of a child with a square shape? ____out of ____ or____ %

C. What are the chances of a child with a round shape? ____out of ____or ____ %

5. Patrick met Patti at the dance. Both of them are heterozygous for their pink body color, which is dominant over a yellow body color. Create a Punnett square to show the possibilities that would result if Patrick and Patti had children. HINT: Read question #3!

A. Genotype Ratio: _____ PP: _____ Pp: _____ pp

Phenotype Ratio: _____ Pink: _____ Yellow

B. What are the chances of a child with a pink body? ____ out of____ or ____%

C. What are the chances of a child with a yellow body? ____out of ____ or ____%
