

Bikini Bottom Genetics

Name PILARZ - EXAMPLES

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 (He) OR homozygous (Ho).
letters *different* *same*

TT Ho Bb _____ DD _____ Ff _____ tt _____ dd _____
 Dd He ff _____ Tt _____ bb _____ BB _____ FF _____

Which of the genotypes in #1 would be considered purebred? = means homozygous

Which of the genotypes in #1 would be hybrids? = means heterozygous

2. Determine the phenotype for each genotype using the information provided about SpongeBob.
what it looks like

Yellow body color is dominant to blue.

YY Yellow Yy Yellow yy Blue

Square shape is dominant to round.

SS _____ Ss _____ ss _____



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

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

Tall = TT, Tt Short = tt

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!

	<u>S</u>	<u>S</u>
<u>S</u>	<u>SS</u>	<u>Ss</u>
<u>s</u>	<u>sS</u>	<u>ss</u>

A. List the possible genotypes and phenotypes for their children.

Ss, ss round, square

B. What are the chances of a child with a square shape? 2 out of 4 or 50%

C. What are the chances of a child with a round shape? 2 out of 4 or 50%

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. List the possible genotypes and phenotypes for their children.

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 _____%