|  |  |  |  |
| --- | --- | --- | --- |
| Trait | Dominant Gene | Recessive Gene |  |
| Body Shape | Squarepants (S) | Roundpants (s) |
| Body Color | Yellow (Y) | Blue (y) |
| Eye Shape | Round (R) | Oval (r) |
| Nose Style | Long (L) | Stubby (l) |

Using the following traits above-Give me the Genotypes for the following

Squarepants:

Roundpants

Roundeyes:

Oval Eyes

Long Nose

Stubby Nose

|  |  |  |  |
| --- | --- | --- | --- |
| Trait | Dominant Gene | Recessive Gene |  |
| Body Shape | Squarepants (S) | Roundpants (s) |
| Body Color | Yellow (Y) | Blue (y) |
| Eye Shape | Round (R) | Oval (r) |
| Nose Style | Long (L) | Stubby (l) |

Using the following traits above-Give me the Genotypes for the following

LL\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ rr\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Yy\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Ss\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

RR\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ll\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**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? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**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 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**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 = **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**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.**

**Square shape (S) is dominant to round**

What is the genotype for the parents

Spongebob\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Susy\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What are the genotype for their children

What is the phenotype for their children

**![A picture containing shoji, building

Description automatically generated]()**

What is the genotypic ratio

What is the genotypic percent

What is the phenotypic ratio

What is the phenotypic percent

**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.**

**Pink (P) body color is dominant to yellow**

What is the genotype for the parents

Patrick\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Patti\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What are the genotype for their children

What is the phenotype for their children

**![A picture containing shoji, building

Description automatically generated]()**

What is the genotypic ratio

What is the genotypic percent

What is the phenotypic ratio

What is the phenotypic percent

**Everyone in Squidward’s family has light blue skin, which is the dominant trait for body color in his hometown of Squid Valley. His family brags that they are a “purebred” line. He recently married a nice girl who has light green skin, which is a recessive trait. Create a Punnett square to show the possibilities that would result if Squidward and his new bride had children. Use B to represent the dominant gene and b to represent the recessive gene.**

What is the genotype for the parents

Squidward\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Squidward’s Bride\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What are the genotype for their children

What is the phenotype for their children

**![A picture containing shoji, building

Description automatically generated]()**

What is the genotypic ratio ,What is the genotypic percent

What is the phenotypic ratio, What is the phenotypic percent

Would Squidward’s children still be considered purebred? Explain.

One of SpongeBob’s cousins, SpongeBillyBob, recently met a cute squarepants gal, SpongeGerdy, at a local dance and fell in love. Use your knowledge of genetics to answer the questions below.

If SpongeGerdy’s father is a heterozygous squarepants and her mother is a roundpants, what is her genotype? Complete the first Punnett square to show the possible genotypes.

Based on your results, what would Gerdy’s genotype have to be? \_\_\_\_\_\_\_\_\_

Complete the second Punnett square to show the possibilities that would result if Billy Bob & Gerdy had children.

What is the genotype for the parents

Squidward\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Squidward’s Bride\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What are the genotype for their children

What is the phenotype for their children

**![A picture containing shoji, building

Description automatically generated]()**

**![A picture containing shoji, building

Description automatically generated]()**

What is the genotypic ratio ,What is the genotypic percent

What is the phenotypic ratio, What is the phenotypic percent

Would Squidward’s children still be considered purebred? Explain.

**Mr. Krabbs and his wife recently had a Lil’ Krabby, but it has not been a happy occasion for them. Mrs. Krabbs has been upset since she first saw her new baby who had short eyeballs. She claims that the hospital goofed and mixed up her baby with someone else’s baby. Mr. Krabbs is homozygous for his tall eyeballs, while his wife is heterozygous for her tall eyeballs. Some members of her family have short eyes, which is the recessive trait. Create a Punnett square using T for the dominant gene and t for the recessive one.**

What is the genotype for the parents

Mr. Krabb’s\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Mrs. Karbb’s\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What are the genotype for their children

What is the phenotype for their children

**![A picture containing shoji, building

Description automatically generated]()**

What is the genotypic ratio ,What is the genotypic percent

What is the phenotypic ratio, What is the phenotypic percent

Did the hospital make a mistake? Explain your answer.