SpongeBob Genetics Name

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

TT

Pp

dd

Ff

Tt

FF

1. **Use the chart to determine the genotype for each phenotype listed below.**

Homozygous squarepants - Heterozygous squarepants - Homozygous yellow body - Homozygous blue body - Heterozygous round eyes - \_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
| **Trait** | **Dominant Allele** | **Recessive Allele** |
| Body Shape | Squarepants (S) | Roundpants (s) |
| Body Color | Yellow (Y) | Blue (y) |
| Eye Shape | Round (R) | Oval (r) |

1. **In Squidward’s family, a blue body color (B) is dominant to green (b). Determine the PHENOTYPE for each genotype below based on this information.**

BB

Bb

bb

1. **If tall eyeballs (T) are dominant to short eyeballs (t), give the GENOTYPES that are possible for members of Mr. Krabbs’ family.**

Tall eyeballs = Short eyeballs =

1. **SpongeBurt is known for his big round eyes (R), which is dominant over an oval eye shape (r). If he is heterozygous for his round eye shape and marries a woman with oval eye shape, what type of eyes might the kids have?**
   1. List the genotypes for each:

Heterozygous Round Eyes - Oval Eyes -

|  |  |
| --- | --- |
|  |  |
|  |  |

* 1. Complete the Punnett square to show the possibilities that would results if SpongeBurt had children with an oval-eyed woman.

More on back …

1. **Patrick recently married Patti, a cute girl he met at a local dance. He is homozygous for his tall head shape (T), which is dominant over a short head (t). If Patti is a short-headed woman, what type of heads would their children have?**
   1. List the genotypes for each: Patrick - Patti -
   2. Complete the Punnett square to show the possible offspring.
   3. Which type of head is most likely: tall or short? Explain.

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| --- | --- |
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|  |  |

* 1. Would the children be considered homozygous? Explain.

1. **Create your own story and Punnett square. You can use characters from SpongeBob or another fictional character Universe.**

SpongeBob Genetics Quiz

Answer Key:

1. TT Homozygous (Ho); Pp Heterozygous; dd Homozygous; Ff Heterozygous; Tt Heterozygous;

FF Homozygous

1. SS; Ss; YY; yy; Rr
2. BB - blue, Bb - blue, bb - green
3. Tall eyeballs - TT, Tt; short eyeballs - tt
4. A. Heterozygous round = Rr, Oval = rr
   1. SpongeBurt: Rr, SpongeBurt wife: rr

|  |  |
| --- | --- |
| Rr | rr |
| rr | rr |

1. A. Patrick - TT, Patti = tt

|  |  |
| --- | --- |
| Tt | Tt |
| Tt | Tt |

* 1. Tall head is most likely, since all genotypes that result would represent a tall head (100%).
  2. The children would not be homozygous, since they would each have a dominant gene and a recessive gene.