Bikini Bottom	– Dihybrid	Practice
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Dominant Gene Recessive Gene

Use the chart to identify the genotypes of the following traits:

- 1. Heterozygous round eyes, blue body
- 2. Hybrid eye shape, purebred roundpants _____

Body Color	
Eye Shape	

Trait

Body Shape	Squarepants (S)	Roundpants (s)
Body Color	Yellow (Y)	Blue (y)
Eye Shape	Round (R)	Oval (r)
Nose Style	Long (L)	Stubby (1)

3. Purebred roundpants, heterozygous long nose _____

SpongeBob's aunt, who is a roundpants, has a cute stubby nose. She has finally found the sponge of her dreams and is ready to settle down. Her fiancé always comments on how adorable her nose is (he says it reminds him of his mother's – aww, how sweet!). They wonder what the chances are of that trait being passed on. Her fiancé is a <u>purebred squarepants</u> and has <u>purebred long nose</u>.

4. Identify the genotypes of the aunt and her fiancé.

Aunt – Roundpants, Stubby Nose = _____

Fiancé – Purebred Squarepants, Long Nose = _____

- 5. What are the possible gamete combinations for each person? Aunt _____ Fiancé ____
- 6. What are the possible genotypes for their children?
- 7. What are the genotypes of SpongeBob, who is heterozygous for his yellow body color and his squarepants, and his wife SpongeSusie, who is blue and has roundpants?

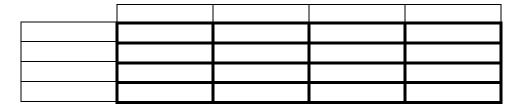
SpongeBob = _____

SpongeSusie = _____

8. What are the possible gamete combinations for each person?

SpongeBob = SpongeSusie =

9. Complete the Punnett square based on the information provided in #7-8 and then answer the questions.



What is the chance of a blue baby?

What is the chance of a squarepants? _____

What is the chance of a blue squarepants?

What is the chance of a purebred recessive for both traits?

10. In starfish, pink body color (P) is domithin (t) ones. Patrick, who is heterozygous who is recessive for both traits.					
What is Patti's phenotype?					
Is it possible for the new couple to l	have offspring tha	at resemble their m	other? Explain.		
11. Before Patrick commits to this relations his thick eyebrows. (He thinks they make I marriage. This question regards eyebrows (nim smarter!) Yo	•			
12. While Squidward's family boasts about light blue skin color, they are also purebrarecessive trait of baldness. Lack of hair issues that he does not want his children to offspring have hair AND with his blue skin in a bride?	ed for a less dist causes Squidwa face. He would l	tinguished trait: t rd some self-estee ike to ensure that h	squidward Traits: Skin Color Blue = B, Green = b Hair		
Must she have hair? Explain					
Must she be blue? Explain	rospect with the g	green squid Octavi ng blue and having	a. While Octavia has hair,		
Squidward =	Octavia = _				
14. Use the genotypes in #13 to complete the Punnett square below and then answer the questions.					
For which traits, if any, is it possible	e for their offspri	ng to be purebred?			
What is the probability of their children being heterozygous for both traits?					