Standard

Name: _____

Period: _____

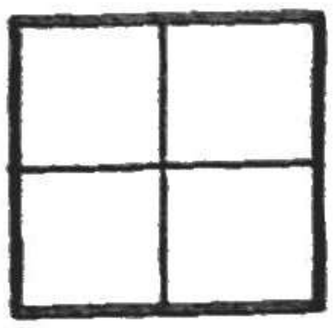
Bikini Bottom Genetics

SpongeBob loves growing flowers for his pal Sandy. Her favorite flowers, Poofkins, are found in red, blue, and purple. Use the information provided and your knowledge of incomplete dominance to complete each section below.

1. Write the correct genotype for each color if R represents a red gene and B represents a blue gene

   Red: _____ Purple: _____ Blue: _____

2. What would happen if SpongeBob crossed a Poofkin with red flowers with a Poofkin with blue flowers. Complete the Punnett square to determine the chances of each flower color.

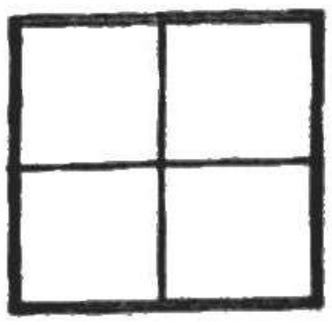


   a. How many of the plants would have red flowers? _____%

   b. How many of the plants would have purple flowers? _____ %

   c. How many of the plants would have blue flowers? _____ %

3. What would happen if SpongeBob crossed two Poofkins with purple flowers? Complete the Punnett square. If 240 offspring were produced, how many would you expect of each phenotype?



   a. How many of the offspring would have red flowers? _____

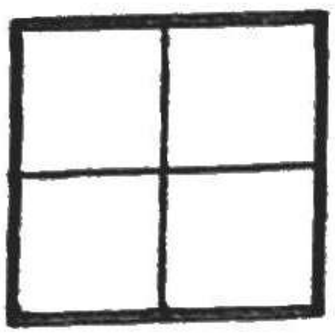
   b. How many of the offspring would have purple flowers? _____

   c. How many of the offspring would have blue flowers? _____

SpongeBob and Patrick love to go jellyfishing at Jellyfish Fields. The fields are home to a special type of green jellyfish known as Goobers and only really great jellyfishermen are lucky enough to catch some on every trip. Many of the jellyfish are yellow (YY) or blue (BB), but some end up green (Goobers) as a result of incomplete dominance. Use this information to help you complete each section below.

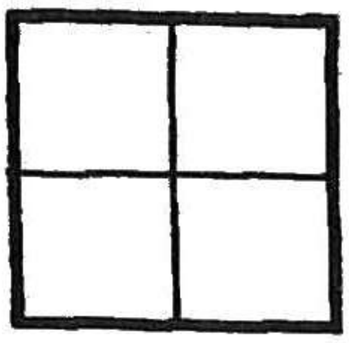
4. What would happen if SpongeBob and Patrick crossed two "goobers" or green jellyfish? Complete the Punnett square to help you determine the probability for each color of jellyfish. Write the genotypic and phenotypic ratios in the space below.

   Genotypic Ratio:



   Phenotypic Ratio:

5. What would happen if they crossed a yellow jellyfish with a goober? Complete the Punnett square to help you determine the probability for each color of jellyfish.



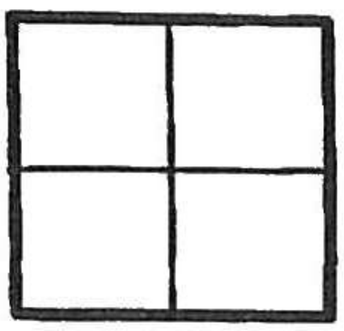
Give the possible genotypes and phenotypes for the offspring.

What percentage of the offspring would be yellow? _____%

What percentage would be blue? _____%

What percentage would be "goobers" (green)? _____%

6. What would happen if they crossed a blue jellyfish with a yellow jellyfish? Complete the Punnett square to help you answer the question. If 100 jellyfish were produced from this cross, how many would you expect for each?

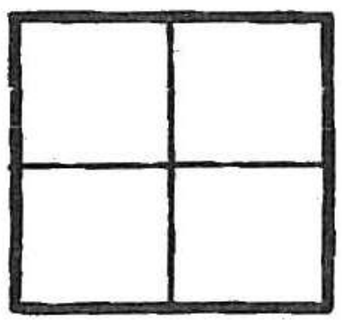


Yellow: _____

Blue: _____

Goobers: _____

7. What would happen if they crossed a blue jellyfish with a goober? Complete the Punnett square to help you answer the question. If 100 jellyfish were produced from this cross, how many would you expect for each?



Yellow: _____

Blue: _____

Goobers: _____