

Name: \_\_\_\_\_ Period: \_\_\_\_\_

# 5.3 PART 1 PUNNETT SQUARES REVIEW #2

## OOMPAH LOOMPAH GENETICS



1. Oompah Loompahs generally have gray faces, which is caused by a dominant gene. The recessive condition results in an orange face. Develop a "key" to show the possible genotypes and phenotypes for the Oompah's face colors.

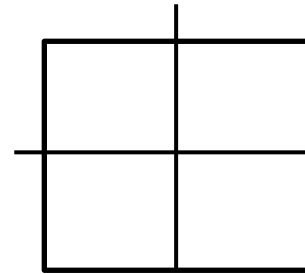
PHENOTYPE	GENOTYPE
Gray Face	
Gray Face	
Orange Face	

2. Two heterozygous Oompahs are crossed.

What is the genotypic ratio? \_\_\_\_\_

What is the phenotypic ratio? \_\_\_\_\_

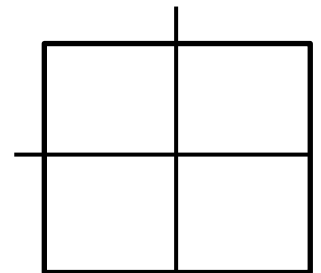
What percentage of the offspring will have orange faces? \_\_\_\_\_



3. A gray faced Oompah (homozygous) is married to an orange faced Oompah.

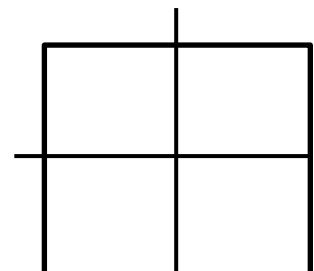
They have 4 Oompah children. How many of those children will have gray faces? \_\_\_\_\_

If they have a total of 8 children, then how many of those children will have gray faces? \_\_\_\_\_

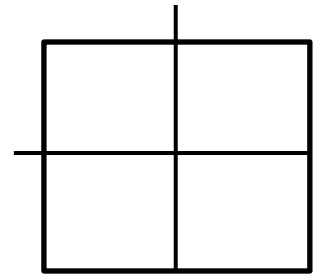


4. Otis Oompah has an orange face is married to Ona Oompah who has a gray face. They have 60 Oompah children, 30 of those children have orange faces.

What are Ona and Otis Oompah's genotypes? \_\_\_\_\_ (Hint! Work backwards to the cross!)



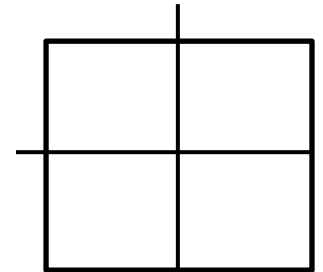
5. Odie Oompah has a gray face, in fact everyone in Odie's family has a gray face, and the family likes to brag that they perfect. Odie married Ondi Oompah, who also has a gray face. But, much to his family's horror, their first child, Ophelia, had an \*gasp\* orange face! How is this possible?!



Given their phenotypes, what would Otto and Ondi's genotype have to be to produce Ophelia? \_\_\_\_\_

What was the chance (in percent) that Odie and Ondi would have an orange-faced child? \_\_\_\_\_

6. Ona Oompah (from #4) divorces Otis and marries Otto. Otto has an orange face. What is the chance (in percent) that Ona and Otto's children will have an orange face? \_\_\_\_\_



### DIHYBRID PUNNETT SQUARES! (TWO TRAITS!)

7. Using the same key as on the first page, now add another trait. Blue hair is a dominant trait, while green hair is recessive. Complete the key below to answer the dihybrid Punnett square question.

PHENOTYPE	GENOTYPE	PHENOTYPE	GENOTYPE
Gray Face		Blue Hair	
Gray Face		Blue Hair	
Orange Face		Green Hair	

8. A homozygous dominant gray faced, green haired Oompah named Ortimer marries an orange faced blue haired (heterozygous) Oompah named Odette. GGbb x ggBb. What will Ortimer and Odette's children look like? Complete the Punnett square to determine the phenotypic and genotypic ratios.


Genotypic Ratios: \_\_\_\_\_

\_\_\_\_\_

Phenotypic Ratios: \_\_\_\_\_

\_\_\_\_\_