Name_____ Student # _____

Genetics WS

Use your notes to complete the following questions. If you are absent, make sure you get a copy of the notes and/or borrow a textbook!

1) Explain the difference between a gene and an allele. _____

_____

2) Explain the difference between a phenotype and a genotype. _____

_____

3) What is heredity the study of? _____

4) Explain the difference between dominant and recessive. _____

_____

5) Explain the difference between homozygous and heterozygous. _____

_____

6) What is the purpose of a Punnett Square? _____

_____

7) Compare multiple allele and polygenic inheritance._____

_____

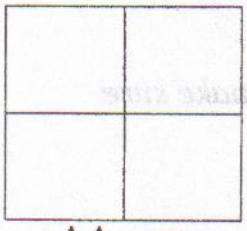
8) Explain why a trait inherited by incomplete dominance is not a blend of two alleles. _____

_____

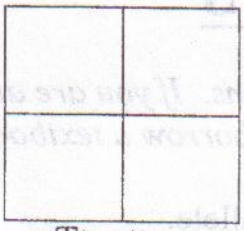
9) Make a Punnett square showing the possible offspring of a couple who have the blood phenotypes AB and O. What are the percentages and possible phenotypes of each of their children?

Continued on back

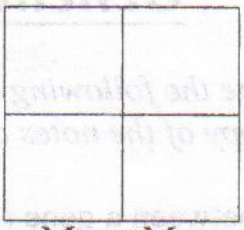
10) Fill in the Punnett Squares for the following crosses:



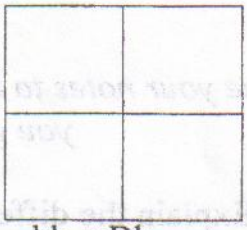
AA x aa



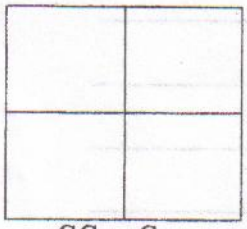
Tt x tt



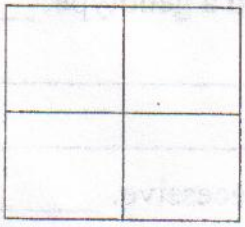
Mm x Mm



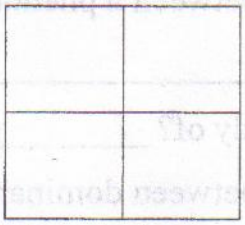
bb x Bb



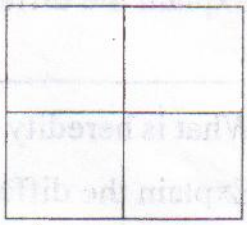
SS x Ss



homozygous dominant x homozygous recessive

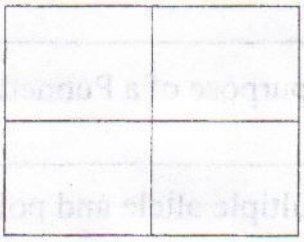


heterozygote x homozygous recessive



heterozygote x heterozygote

15a) Finish the Punnett Square for the following cross of a man with blue eyes (bb) and a woman who is heterozygous for brown eyes (Bb).



15b) What are the chances that the couple will have a blue eyed child?___%

A brown eyed child?_____%

We usually put this information into a ratio. A 75% ratio to 25 % can be written as a 3:1 ratio, or 3 parts to 1. Ratios are always reduced, so a 2:2 ratio would be reduced to 1:1.

16c) What is the ratio of blue eyed children to brown eyed children? _____

17) In cats, black fur (F) is dominant to tabby fur (f). Do the cross for a heterozygous black cat and a tabby cat.