

****MAKE SURE YOU CAN DO ALL TYPES OF CROSSES USING PUNNETT SQUARES!!!****

1. What is incomplete dominance? _____
 a. Give an example. What are the traits you are using? _____

 b. Show what the genotypic ratio would be: _____
 c. What is the phenotypic ratio: _____



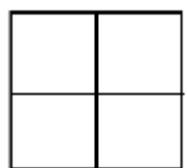
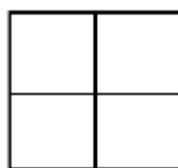
2. What is codominance?
 a. Give an example. What are the traits you are using? _____

 b. Show what the genotypic ratio would be: _____
 c. What is the phenotypic ratio: _____



3. What are the 3 alleles for blood type? _____
 a. 2 genotypes for Type A blood? _____ & _____
 b. 2 genotypes for Type B? _____ & _____
 c. Genotype for Type O? _____
 d. Genotype for Type AB? _____

4. Cross someone with type AB with someone with type O.
 a. What % of each blood type do you get? _____



5. Cross someone with heterozygous A blood type with a heterozygous B blood type
 a. What % of each blood type do you get? _____

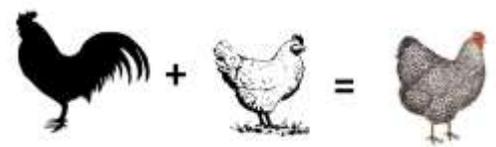
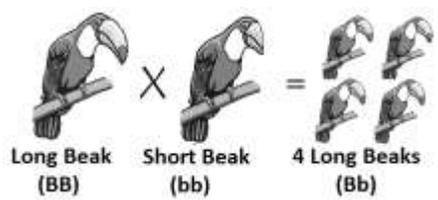
6. What does a horizontal line between a male & female on a pedigree symbolize? _____
 7. Draw the shape represents a male in a pedigree: _____ Male: _____ Female: _____
 a. Draw the shape that represents a female
 b. What does it mean if the symbols are shaded in? _____
 8. In a trait controlled by incomplete dominance, how many phenotypes are possible? _____
 9. What is meant by the term polygenic? _____
 10. Give a few examples of human traits that are polygenic. (clue: look in the mirror) _____
 11. Why do males typically have X-linked recessive traits more often than females? _____

12. Even though a trait controlled by multiple alleles has at least 3 different alleles, how many alleles does each offspring still inherit from their parents for a trait like this? _____
 13. Does a Punnett square show ACTUAL results in a cross or the EXPECTED probability of the results? _____
 Explain. _____

14. Identify the type of inheritance for each scenario. Choose from the box at right:

- _____ a. $TT \times tt = 4 Tt$ (all are tall)
 _____ b. L = long nails : l = short claws. A heterozygous individual (Ll) has both long and short claws.
 _____ c. A red poppy plant (RR) is crossed with a yellow poppy plant(rr). All of the offspring are heterozygous (Rr) and are red.
 _____ d. Red cow x white cow = roan cow
 _____ e. Marcopalian have thick, viscous snot or slimy, runny snot. If you cross a homozygous thick, viscous snot Marcopalian with a homozygous slimy, runny snot Marcopalian, you get 4 heterozygous offspring who have “in-between” snot—i.e.—it is not thick or runny but kinda in the middle.
 _____ f. _____ g.

a) Complete dominance
b) Incomplete dominance
c) Codominance
d) Multiple alleles

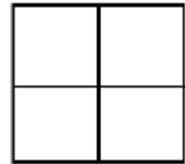


_____ h. A^D = double wings, A^T = triple wings, a = no wings.

_____ i. Black x white = gray

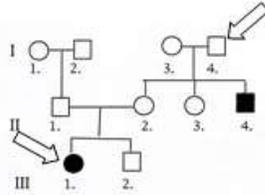
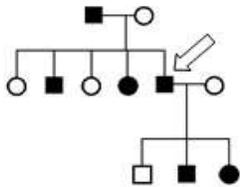
15. Cross a colorblind male ($X^N Y$) with a normal color vision female carrier ($X^N X^n$).

- a. What % of their children would be colorblind? _____
 b. What % would be carriers of colorblindness? (Remember this is an X-linked trait).



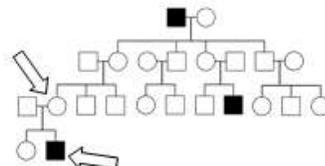
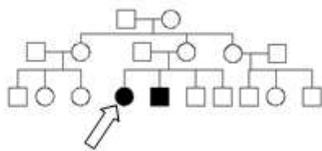
16. Analyze the following pedigrees for the type of inheritance: **autosomal dominant, autosomal recessive, or X-linked recessive**

- a. I.D. the genotype of the people the arrows are pointing to by labeling them.



- b. For the pedigree below

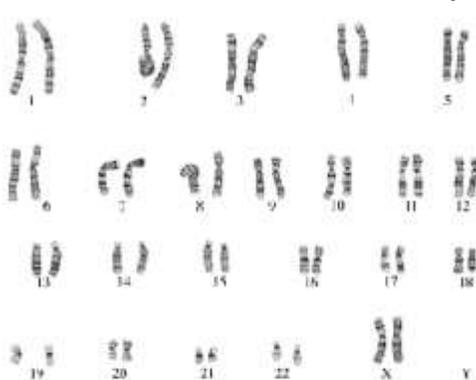
- make Person 1 and 2 married
- Persons 3, 4, and 6 are 1 & 2's offspring
- Person 4 is married to Person 5 and Person 7 is their child



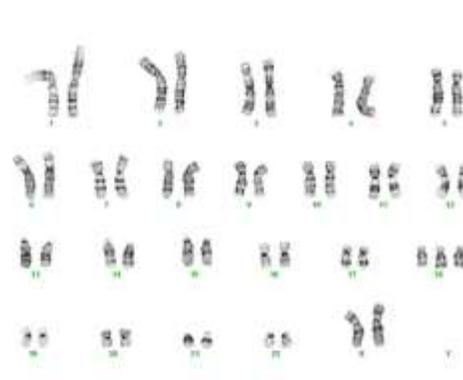
17. What is a karyotype? _____

For what is it used? _____

18. Analyze the following karyotypes and tell whether each is a male or female and then indicate if they are normal or have a disorder. If there's a disorder, identify it.



Gender: _____
 Is there a problem? _____
 (circle where if yes)



Gender: _____
 Is there a problem? _____
 (circle where if yes)

Spiraling Questions:

19. What is crossing over _____
 What is its purpose? _____
20. What are the 4 phases of mitosis? (Remember P-M-A-T)
- a. _____ c. _____
 b. _____ d. _____
21. What happens at the very end of mitosis (during "T")? _____
22. Why must a cell copy its DNA before it divides? _____