

Sex-linked Traits and Puzzling Pedigrees!!!

Answer the following questions on a separate sheet of paper! Show all your work.

1. A female schmoo who is graceful X^G is mated to a male who is gruesome X^g . Of the F1 males, 50% are graceful and 50% are gruesome. Of the F1 females, 50% are graceful and 50% are gruesome. What are the genotype of the parents. Show a Punnet Sq. and the genotypic and phenotypic ratios of the F1 generation.

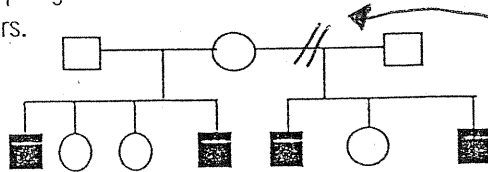
2. A sex-linked recessive allele X^f produces red-green color blindness in humans. A normal woman whose father was color blind marries a color blind man.
 (a) What are the chances of the 1st child being male?
 (b) What are the chances that the 1st child from this marriage will be a color blind boy?
 (c) Of the girls produced by these parents, what percentage is expected to be color blind?
 (d) Of all the children of these parents, what percentage could have normal vision?

3. Given that color blindness is a sex-linked recessive trait, why are males more likely to be color blind than females?

4a. Men always say that ~~they~~ can tell if ~~they're~~ going to go bald by looking at ~~their~~ mother's family. Given that it is a sex-linked recessive condition, are men correct in looking at their mother's family? Why or why not?

b. A woman, whose father was bald, married a man with a full head of hair. They had 4 sons. How many of the boys would you expect would eventually go bald? B =non-bald, b =bald (You will need to determine the genotype of the woman first! She is not bald.)

5. The following pedigree tracks the inheritance of a dental abnormality (d). Write the genotypes of all the family members.



woman was married before and has 3 children with her former husband

6. Draw a family pedigree tracking the expression of tongue rollers (T). A tongue rolling man marries a tongue rolling woman #1, and they have a non-rolling son and tongue rolling daughter. The son marries a tongue rolling woman #2. They have 5 sons and 5 daughters, all of whom were tongue rollers. What is the genotype of woman #2?

The tongue rolling daughter marries a tongue rolling man. Their one son is a non-roller. What is the genotype of the tongue rolling daughter and her husband?

Unit 2 Review

INSTRUCTIONS: For each question, select the **best** answer and circle your choice.

- Recessive traits are masked in a hybrid.
 - True
 - False
- Heredity is the passing on of traits from generation to generation.
 - True
 - False
- What do we call the crossing of two purebred individuals, each showing different forms of the same trait?
 - dominance
 - codominance
 - hybridization
 - incomplete dominance
- Which of the following is homozygous dominant?
 - kk
 - sS
 - PP
 - Qq
- Which of the following shows the results of the offspring of a cross between a purebred recessive short-haired animal and a purebred dominant long-haired animal?
 - 100% short hair
 - 100% long hair
 - 50% short hair and 50% long hair
 - 75% long hair and 25% short hair

For questions 13 to 16, classify each as (G) genotype or (P) phenotype.

- RR _____
- a tall cat _____
- the genes an individual organism has with respect to a specific trait _____
- the physical appearance of an organism with respect to a particular trait _____
- Mutation can have no effect on an organism.
 - True
 - False
- Dominant traits always get expressed over recessive traits.
 - True
 - False
- A white female cat mates with a black male cat. All the offspring are white. What would be the best description of the genotype of the female parent?
 - recessive
 - homozygous dominant
 - codominant
 - homozygous recessive

Match each description on the left with the correct term on the right. Each term may be used as often as necessary. Record your answers on the lines provided.

Description	Term
6. one of several forms of the same gene _____	A. dominant
7. the physical appearance of an individual _____	B. allele
8. this trait can be masked _____	C. genotype
9. the genetic makeup of an individual _____	D. recessive
10. both of these alleles affect the phenotype _____	E. phenotype
11. this trait will be expressed _____	F. codominant
12. the pair of alleles possessed by an individual for a given characteristic _____	