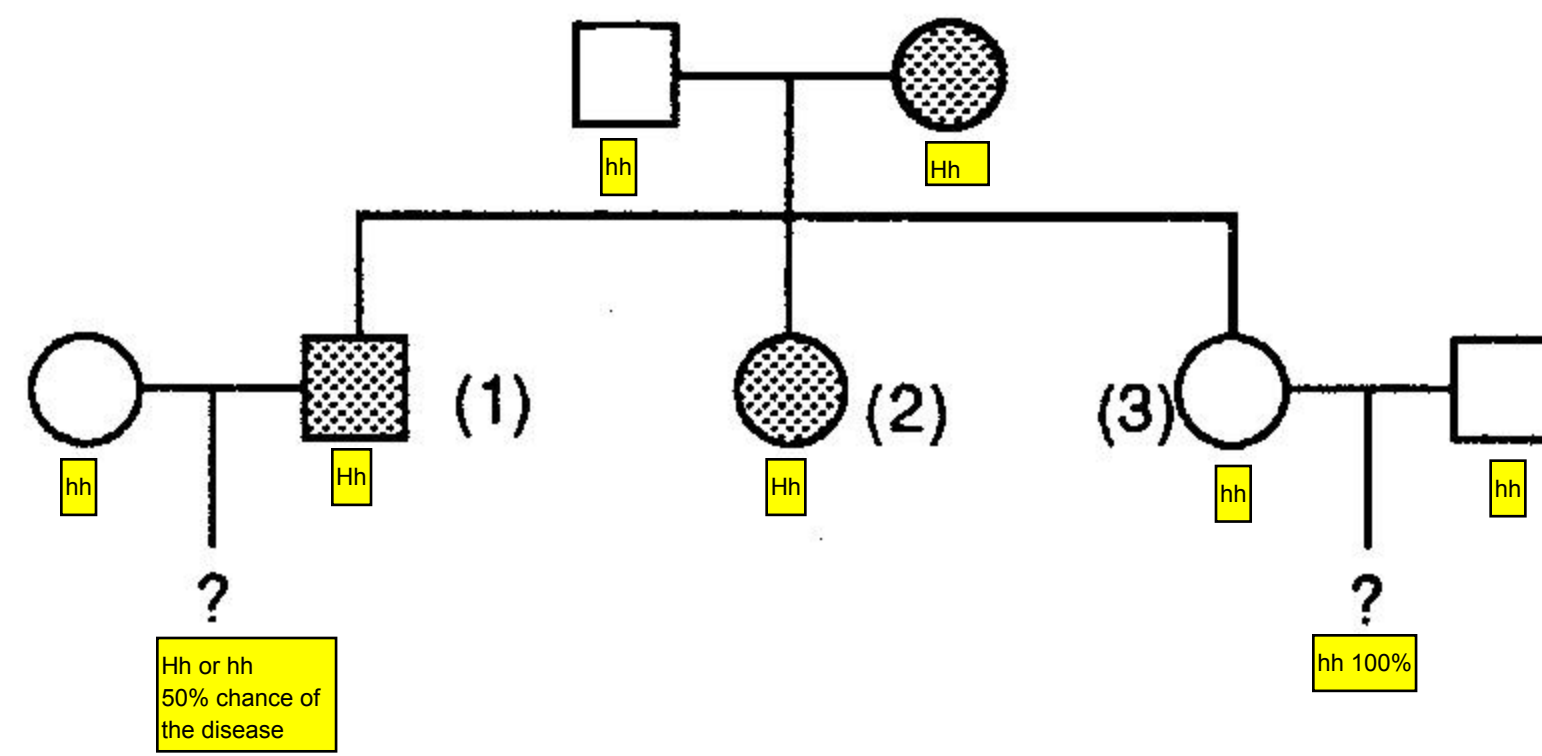


9. Answer the questions for the following pedigree:



What is the mode of inheritance shown in this pedigree? a. dominant

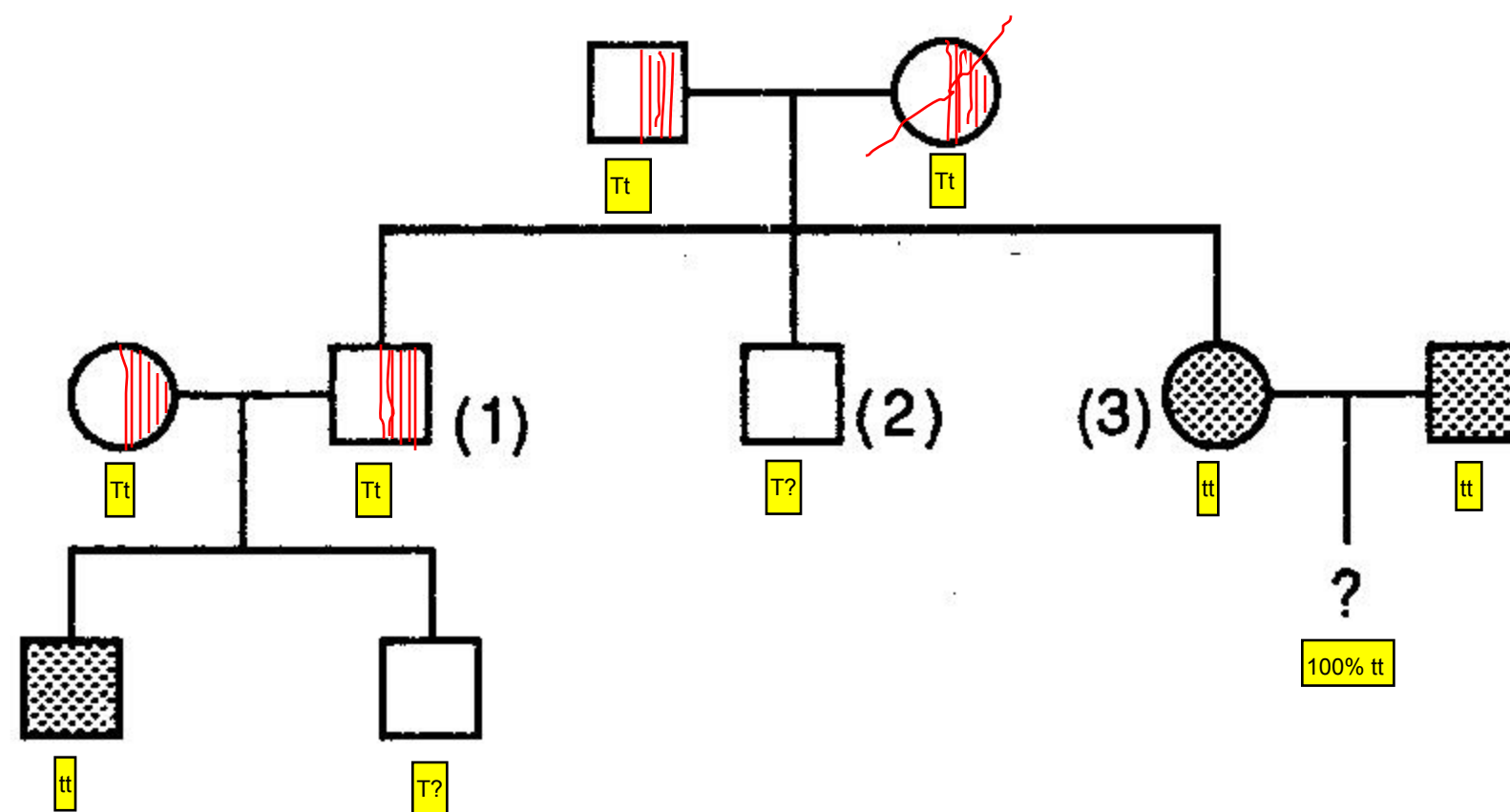
What is the genotype of person 1? b. Hh

What are the chances of person 1 having normal children? c. 50% chance of normal

What are the chances of person 3 having normal children? d. 100% chance of normal

10. Answer the questions for the following pedigree:

What is the mode of inheritance in this pedigree? a. recessive



For person 2, the genotype is b. Tt, and the phenotype is c. no disease (tay Sachs).

For person 1, the genotype is d. Tt.

How did you determine this? e. Since they don't have the disease they must have one "T" This person must have given a "t" allele to their oldest son who has the disease "tt"

What are the chances that person 3's children will be normal? f. 0% chance of normal

11. Consider a model in which there are three gene pairs of alleles; a dominant allele in any pair adds pigment to the skin. Use the letters *A*, *B*, *C* to indicate pigment formation and *a*, *b*, *c* to indicate lack of pigment formation.

What is the genotype for the darkest individual? a. AABBCC

What is the genotype for the lightest individual? b. aabbcc

What is the genotype for the offspring from a cross of the individuals from *a* and *b*? c. AaBbCc

How does the skin color of this person compare to either of the parents? d. The phenotype would be an even mixture with a skin color shade between light and dark.

12. A man with blood type A reproduces with a woman who has blood type B. Their child has blood type O. Give the genotype of all persons involved: man a. I^A and i (AO), woman b. I^B and i (BO), and child c. i, oo.

13. If a child has AB blood and the father has type B blood, what could the genotype of the mother be? AA or AO or AB

14. If a child has BO blood and the father has type O blood, what could the genotype of the mother be?

BB or BO or BA

15. Both a man and a woman have sickle-cell trait. List all phenotypes among the offspring, as well as the chance (percent) of each occurring. a. SS = normal = 25%, b. S S, = trait = 50%, c. S, S, = disease = 25%.