

- Which members of the family above are afflicted with Huntington's Disease? _____
- There are no carriers for Huntington's Disease- you either have it or you don't. With this in mind, is Huntington's disease caused by a dominant or recessive trait? _____
- How many children did individuals I-1 and I-2 have? _____ What is the genotype of II-3? _____
- How many girls did II-1 and II-2 have? _____ Which daughter (younger or older) has Huntington's Disease? _____
- How are individuals III-2 and II-4 related? _____ I-2 and III-5? _____

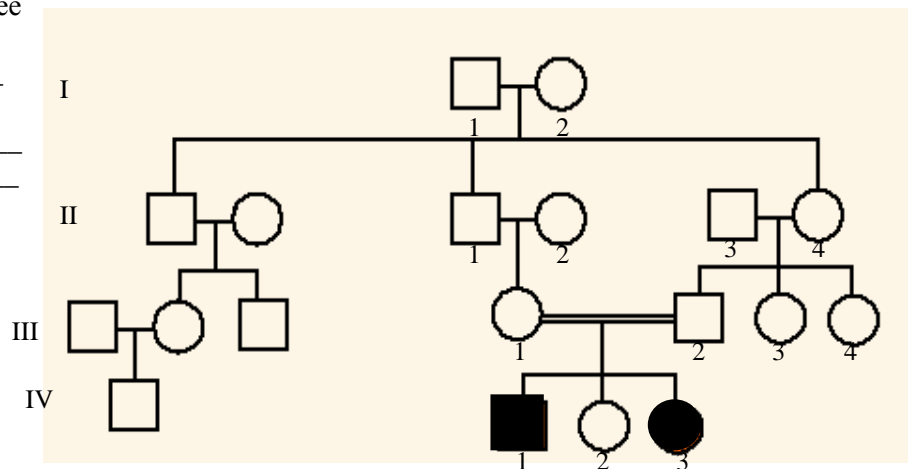
6. The pedigree to the right shows a family's pedigree for Hitchhiker's Thumb. Is this trait dominant or recessive? _____

7. How do you know? _____

8. How are individuals III-1 and III-2 related? _____

9. How would you name the 2 individuals that have hitchhiker's thumb? _____

10. Name the 2 individuals that were carriers of hitchhiker's thumb. _____



Phenotype of III-2? _____ Genotype of III-1? _____

11. Is it possible for individual IV-2 to be a carrier? _____ Why? _____

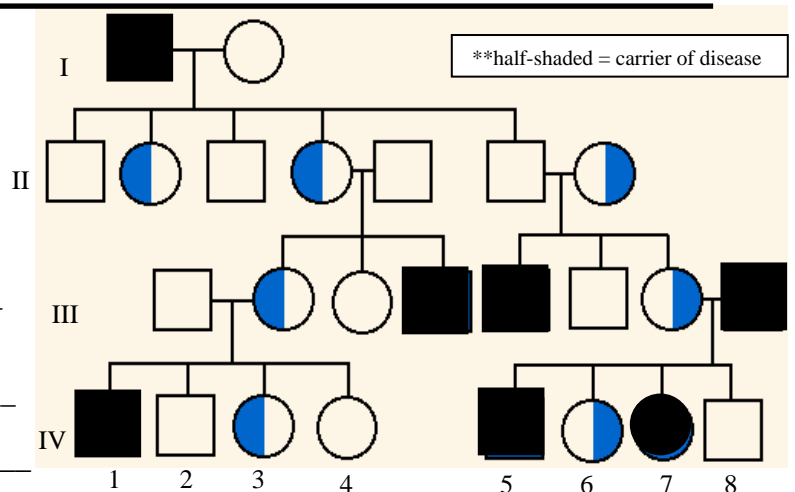
12. The pedigree to the right shows a family's pedigree for colorblindness. Which sex can be carriers of colorblindness and not have it? _____

13. With this in mind, what kind of trait is Colorblindness? _____

14. Why does individual IV-7 have colorblindness? _____

15. Why do all the daughters in generation II carry the colorblind gene? _____

16. Name two IV generation colorblind males. _____

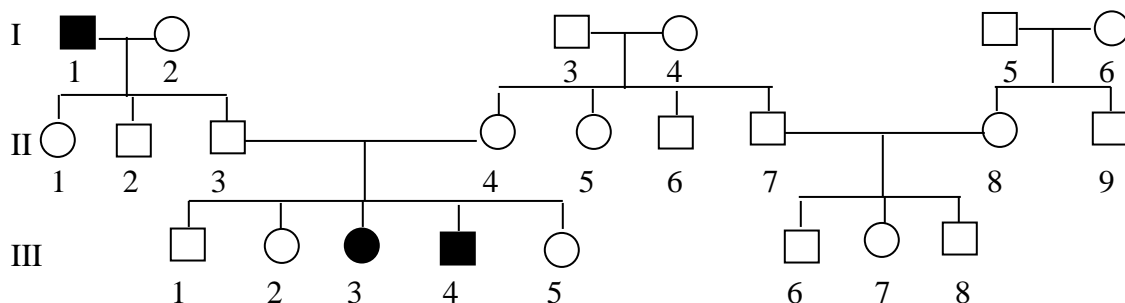


Genetics Pedigree Worksheet

A pedigree is a chart of a person's ancestors that is used to analyze genetic inheritance of certain traits – especially diseases. The symbols used for a pedigree are:

- | | |
|---|---|
| <p>○ female, unaffected</p> <p>● female, affected</p> | <p>□ male, unaffected</p> <p>■ male, affected</p> |
|---|---|

- Siblings are placed in birth order from left to right and are labeled with numbers.
- Each generation is labeled with a Roman numeral.
 - Example: we would name an individual II-3 if he/she was in the second generation and the 3rd child born



Identify the genotypes (use A or a) of the following individuals using the pedigree above. Also identify if they are homozygous dominant, homozygous recessive, or heterozygous

- | | |
|------------------------|-----------------------|
| • III-3: _____ = _____ | • I-1: _____ = _____ |
| • II-1: _____ = _____ | • II-4: _____ = _____ |
| • III-4: _____ = _____ | • II-3: _____ = _____ |

1. Is this trait dominant or recessive? _____
 Explain your answer. _____

2. How can you know for sure that individuals II-3 and II-4 are heterozygous?

3. Brown eyes are a dominant eye-color allele and blue eyes are recessive. A brown-eyed woman whose father had blue eyes and whose mother had brown eyes marries a brown-eyed man whose parents are also brown-eyed. They have a son who is blue-eyed. Please draw a pedigree showing all four grandparents, the two parents, and the son. Indicate which individuals you are certain of their genotype and where there is more than one possibility.