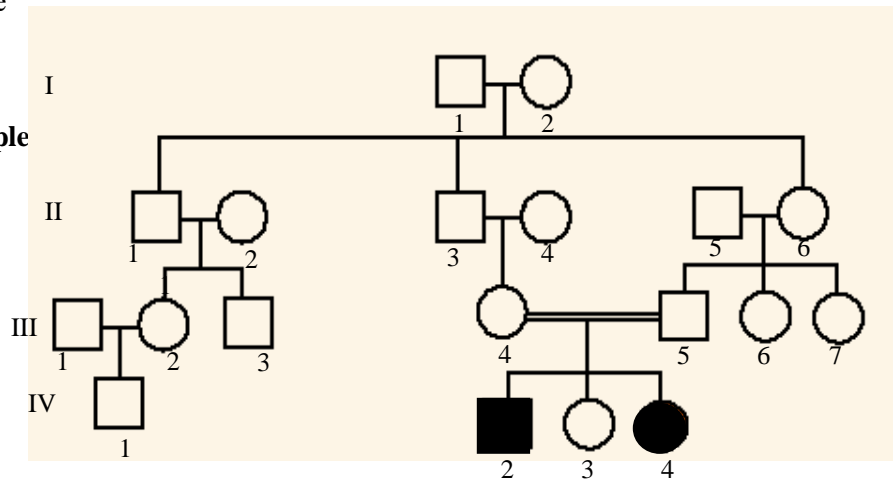


- Which members of the family above are afflicted with Huntington's Disease? **I1, II2, II3, II7, III3**
- There are no carriers for Huntington's Disease- you either have it or you don't. With this in mind, is Huntington's disease caused by a dominant or recessive trait? **Dominant**
- How many children did individuals I-1 and I-2 have? **6**
- How many girls did II-1 and II-2 have? **2** How many of these daughters have Huntington's Disease? **1**
- How are individuals III-2 and II-4 related? **Uncle/Niece** I-2 and III-5? **Grandma/Grandson**

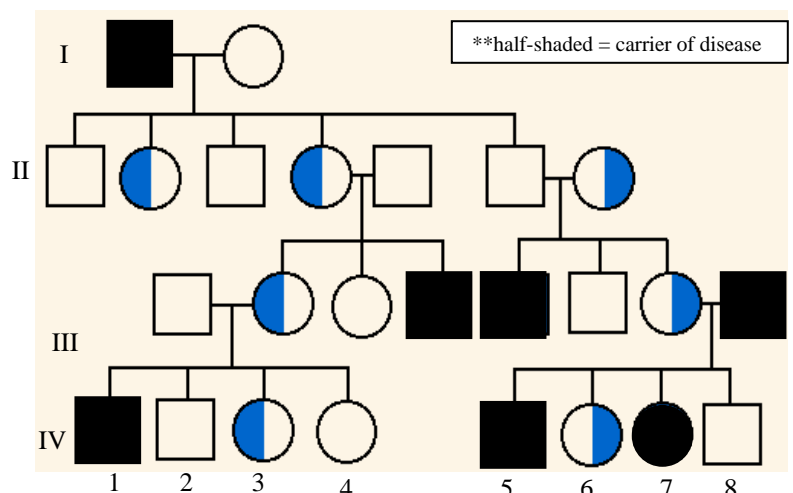
6. The pedigree to the right shows a family's pedigree for Hitchhiker's Thumb. Is this trait dominant or recessive? **Recessive**



- How do you know? **Because only 2 out of 19 people have it, making it rare.**
- How are individuals III-2 and III-3 related? **Brother/Sister; siblings**
- How would you name the 2 individuals that have hitchhiker's thumb? **IV-2, IV-4**
- Name the 2 individuals that were carriers of hitchhiker's thumb. **III-4 and III-5**

11. Is it possible for individual IV-3 to be a carrier? **Yes Why? parents are carriers, punnett square shows 50% chance**

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



13. With this in mind, what kind of trait is colorblindness (use your notes)? **X-Linked**

14. Why does individual IV-7 have colorblindness? **Because her mom is a carrier and dad has it**

15. Why do all the daughters in generation II carry the colorblind gene? **b/c dad was affected and its on the X**

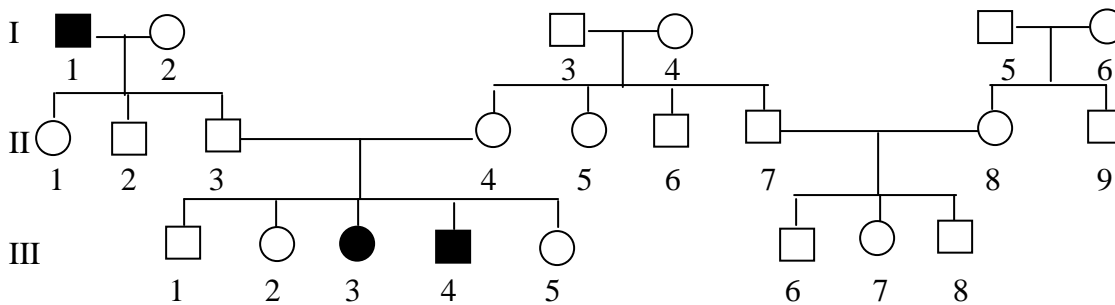
16. Name 2 generation IV colorblind males. **IV-1, IV-5**

**Pedigree Worksheet KEY**  
**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:



- 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 3<sup>rd</sup> child born



Try to identify the genotypes of the following individuals using the pedigree above.  
 (homozygous dominant, homozygous recessive, heterozygous)

- III-3: **Homozygous recessive**
- II-1: **Heterozygous**
- I-1: **Homozygous recessive**
- II-4: **Heterozygous**

1. Is this trait dominant or recessive? Explain your answer.  
**It is a recessive trait because generation II does not have the disease and Generations I and III do have it.**
2. How can you know for sure that individuals II-3 and II-4 are heterozygous?  
**Because their offspring have the disease so they are both carriers of it.**
3. Do you think the cross above is sex-linked or autosomal? Explain your answer.  
**It is autosomal because males and females seem to be affected at the same rates. If it was sex-linked, it would mean that more males are affected.**