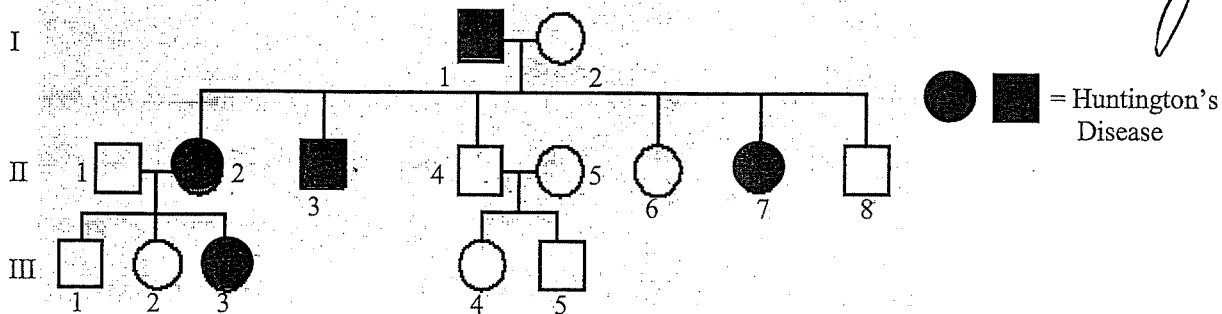


**Pedigree Worksheet**

Name \_\_\_\_\_

*Key*



- Which members of the family above are afflicted with Huntington's Disease? I-1, II-2, 3, 7, III-3
- 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? 3 How many have Huntington's Disease? \_\_\_\_\_
- How are individuals III-2 and II-4 related? cousins I-2 and III-5? Grandmother - grandson

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

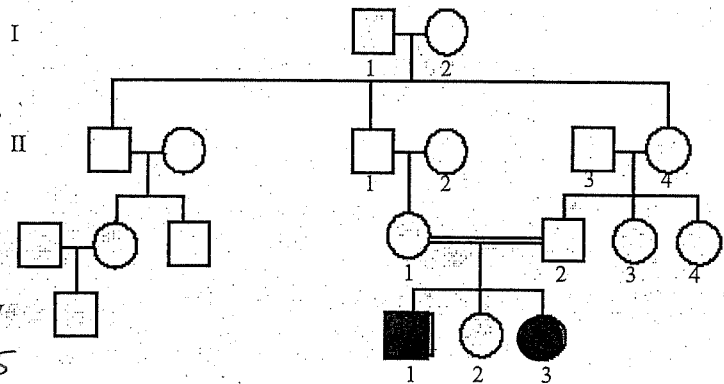
7. How do you know? Unaffected parents (III-4+5) have affected children

8. How are individuals III-1 and III-2 related? cousins + spouses

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

10. Name the 2 individuals that were carriers of hitchhiker's thumb. III-4 and III-5

11. Is it possible for individual IV-2 to be a carrier? Yes Why? She could have received recessive allele from either parent



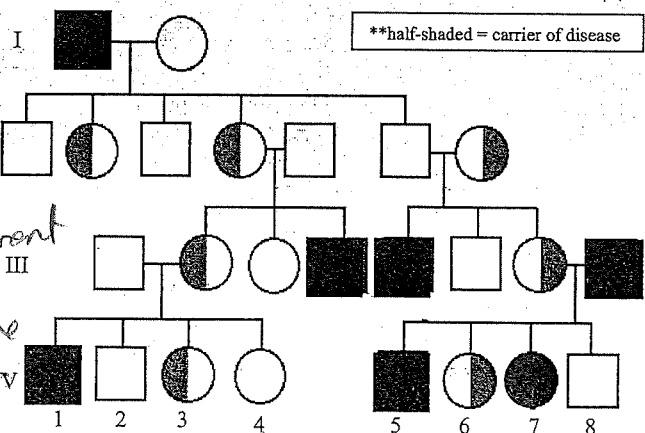
12. The pedigree to the right shows a family's pedigree for colorblindness. Which sex can be carriers of colorblindness and not have it? Females

13. With this in mind, what kind of trait is colorblindness (use your notes)? Recessive

14. Why does individual IV-7 have colorblindness? She received a recessive allele from each parent

15. Why do all the daughters in generation II carry the colorblind gene? Dad is colorblind so they all receive the recessive allele from his "X" chromosome

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



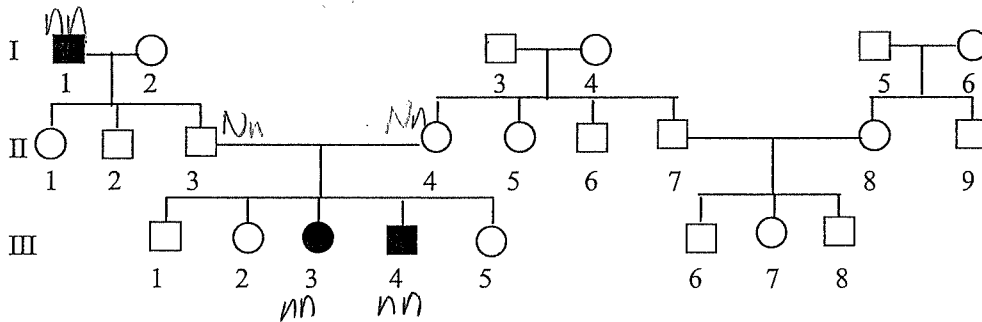
Name \_\_\_\_\_ *Key*

**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:

- female, unaffected
- male, unaffected
- female, affected
- male, affected

- 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: nn - homozygous recessive
- I-1: nn - homozygous recessive
- II-1: Nn - heterozygous
- II-4: Nn - heterozygous

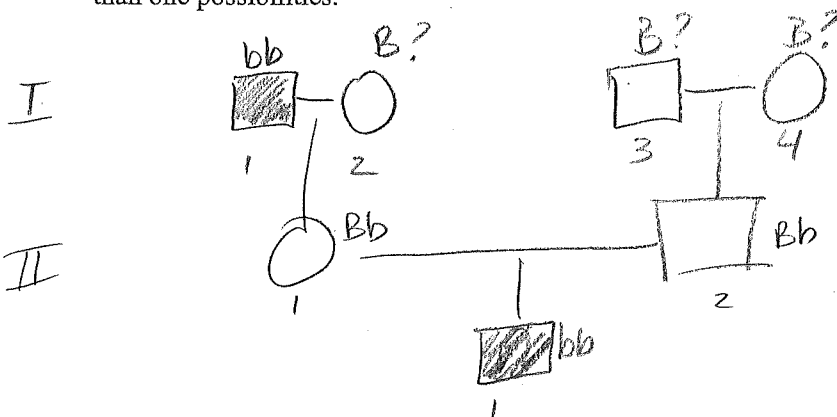
1. Is this trait dominant or recessive? Explain your answer.

Recessive. Since II-3 and II-4 are heterozygous & unaffected, the unaffected allele is dominant, so affected allele must be recessive.

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

They are unaffected but have affected children, so they must both carry the allele for the disorder, making them 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 are more than one possibilities.



Brown = B  
blue = b

At least one of I-3 and I-4 must be heterozygous.