1. Which members of the family above are afflicted with Huntington’s Disease? ________________

2. 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? __________________

3. How many children did individuals I-1 and I-2 have? ________________

4. How many girls did II-1 and II-2 have? ________________ How many have Huntington’s Disease? ________________

5. 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. What are the genotypes of the 2 individuals that have hitchhiker’s thumb? ________________________________

10. Name the 2 individuals that were definitely carriers of hitchhiker’s thumb. ________________________________

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 (use your notes)? ________________________________

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

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

16. Identify 2 generation IV 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:

- ○ female, unaffected
- ● female, affected
- □ male, unaffected
- ■ 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 3rd child born

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

- III-3: ________________________________  
- II-1: ________________________________  
- I-1: ________________________________  
- II-4: ________________________________  

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 are more than one possibilities.