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. How would you name the 2 individuals that have hitchhiker’s thumb? __________________________

10. Name the 2 individuals that were 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. Name 2 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:

- 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

I  □  1  2
II □  1          2        3        4
    □  □  □  □  □  □  □  □
III □  □  □  □  □  □  □  □
   □  □  □  □  □  □  □  □

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.
1. Which members of the family above are afflicted with Huntington’s Disease? I1, II2, II3, II7, III3

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? Dominant

3. How many children did individuals I-1 and I-2 have? 6

4. How many girls did II-1 and II-2 have? 2 How many have Huntington’s Disease? 1 or 5

5. 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

7. How do you know? III-1 and III-2 do not have it but their children do.

8. How are individuals III-1 and III-2 related? Cousins/Marriage

9. How would you name the 2 individuals that have hitchhiker’s thumb? IV-1 and IV-3

10. Name the 2 individuals that were carriers of hitchhiker’s thumb. III-1 and III-2

11. Is it possible for individual IV-2 to be a carrier? Yes Why? b/c parents were heterozygous

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)? Sexlinked/recessive

14. Why does individual IV-7 have colorblindness? b/c mom was a carrier and dad was affected

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 IV generation colorblind males. IV-1, IV-5