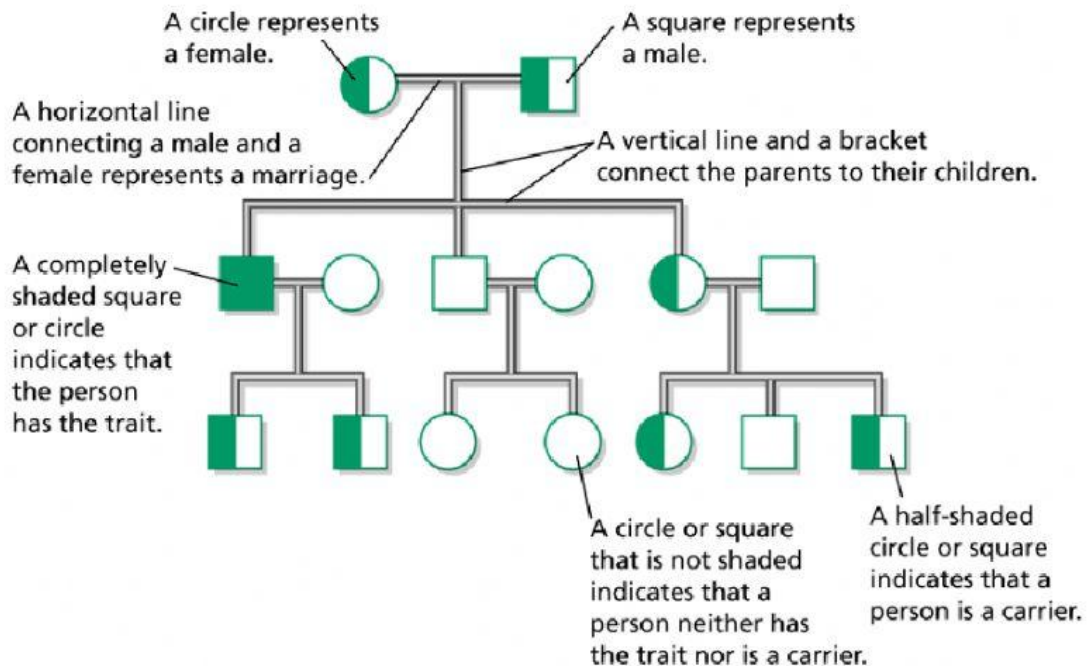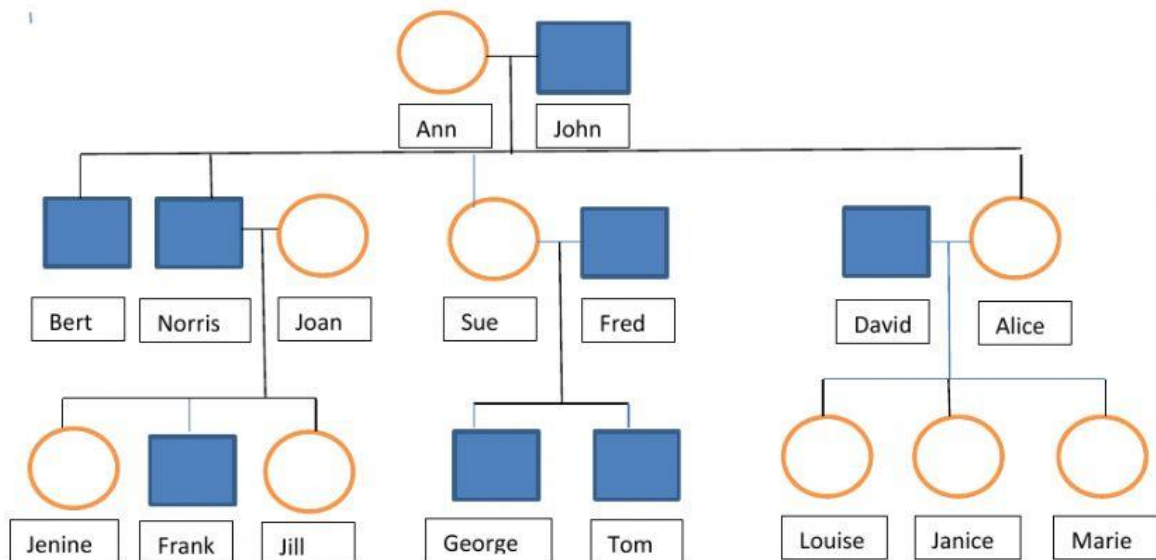Name _____ Date _____ Period _____

Pedigree Analysis

- Pedigree charts are important in genetics studies. The charts help scientists visualize the inheritance patterns of traits in a family.
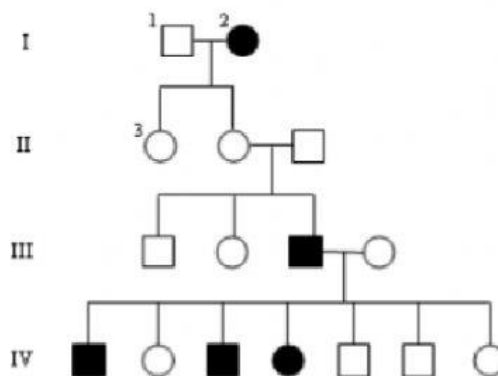
A circle represents a female.

A square represents a male.

A horizontal line connecting a male and a female represents a marriage.

A vertical line and a bracket connect the parents to their children.

A completely shaded square or circle indicates that the person has the trait.

A circle or square that is not shaded indicates that a person neither has the trait nor is a carrier.

A half-shaded circle or square indicates that a person is a carrier.

Read the chart below and answer all of the following questions.

LIVEWORKSHEETS

1. Who is the bachelor uncle of Jenine, Frank, and Jill?
2. For how many families are John and Ann grandparents?
3. What is the family relationship between Jill and George?
4. Who are Jenine's two uncles who married into the family?
5. What relation is Louise to Fred?
6. What relation is George to Joan?
7. What relation is Sue to Louise?
8. What relation is Joan to Bert?
9. What relation is Fred to Alice?
10. Frank and Jill were born on the same day. What type of twins are they?

Interpreting a Human Pedigree
Use the pedigree below to answer 1-5

1. In a pedigree, a square represents a male. If it is *darkened* he has *hemophilia*; if clear, he had normal blood clotting.
   a. *How many males are there?* _____
   b. *How many males have hemophilia?* _____
2. A circle represents a female. If it is *darkened*, she has *hemophilia*; if open she is normal.
   a. *How many female are there?* _____
   b. *How many females have hemophilia?* _____
3. A marriage is indicated by a horizontal line connecting a circle to a square.
   a. *How many marriages are there?* _____
4. A line perpendicular to a marriage line indicates the offspring. If the line ends with either a circle or a square, the couple had only one child. However, if the line is connected to another horizontal line, then several children were produced, each indicated by a short vertical line connected to the horizontal line. The first child born appears to the left and the last born to the right.
   a. *How many children did the first couple (couple in row I) have?* _____
   b. *How many children did the third couple (couple in row III) have?* _____
5. Level I represent the first generation, level II represents the second generation.
   a. *How many generations are there?* _____
   b. *How many members are there in the fourth generation?* _____