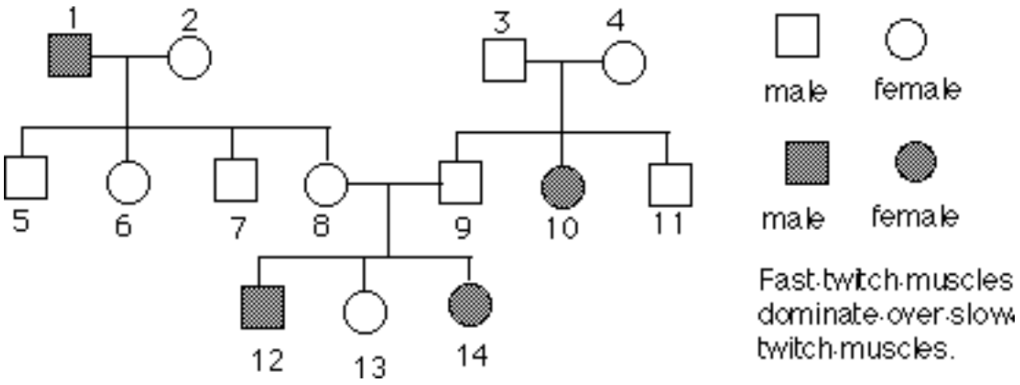
Name _____ **PEDIGREE ANALYSIS**

In genetics, traits can be traced over several generations similar to a family tree. This family tree is called a Pedigree chart. Pedigree charts are useful in gathering background genetic information that can be used for medical reasons. Horse race enthusiasts also rely heavily on pedigree charts to predict a horse's success. sWhen interpreting pedigree charts remember square are male and circles are females

1. Use the below pedigree chart to answer the following three questions. Muscle type is not a sex linked characteristic.



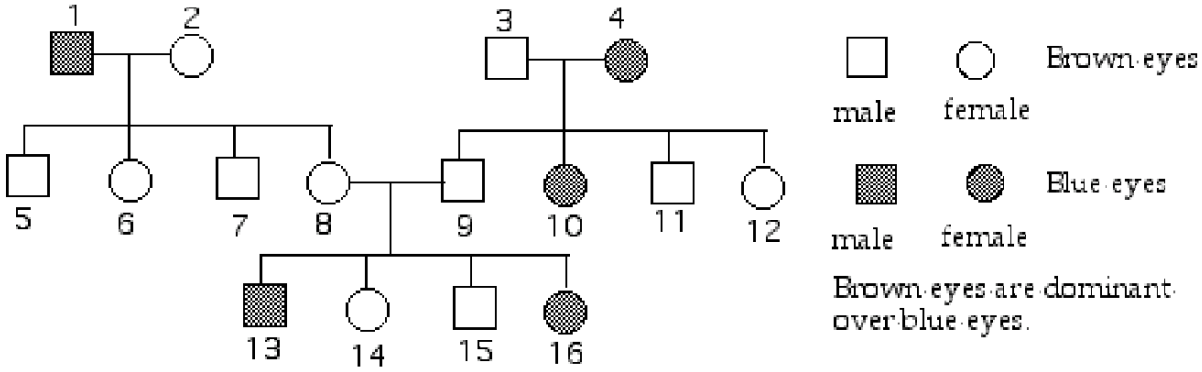
a. Place the genotypes of each individual below its symbol.

b. What is the genotype of individual #3 and 4?.

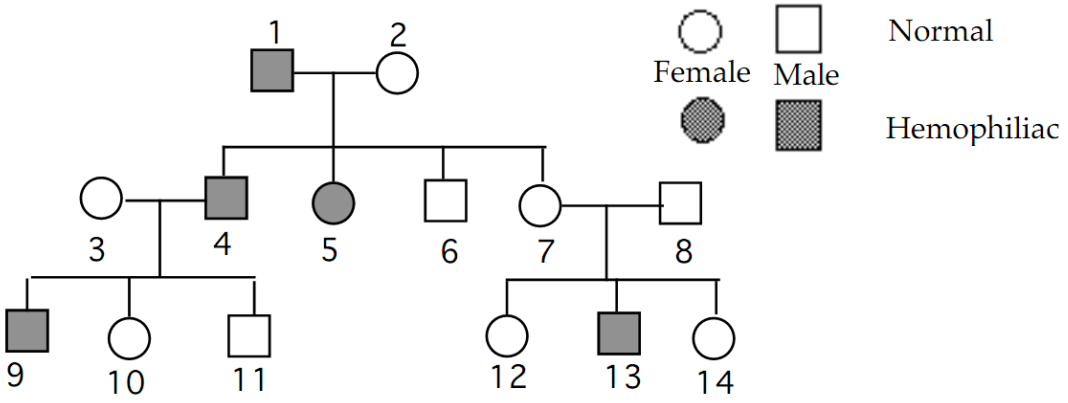
c. Can either individual #8 or 9 be homozygous?

d. Explain the family relationship that #12 has with #2.

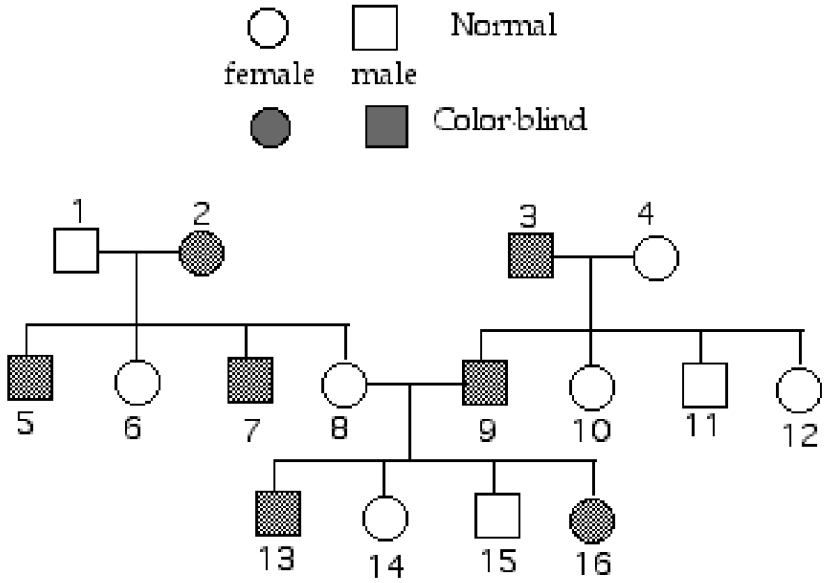
2. Label the genotype for each of the individuals below its symbol on the pedigree chart (note: eye color is **not** a sex-linked trait).



3. List the possible genotypes of the following hemophilia pedigree chart below. **Remember** hemophilia **<u>is</u>** a **sex linked trait** that is caused by a **recessive allele,** therefore you must denote the individuals sex chromosomes (X^NX^n and X^nY or Nn and nY) as well as the hemophilia allele (n).



4. Examine the following pedigree chart of color-blindness. In humans, color blindness is caused by a **recessive sex-linked** allele. On the diagram, label the genotypes of the individuals 1-16.



5. A blue-eyed man (1) whose parents were brown eyed (2 & 3), marries a brown eyed woman (4), whose father was brown eyed (5) and whose mother (6) was blue eyed. They have one female child who is blue eyed (7). Blue eyes are recessive.

   a. Make a pedigree chart based on the above information.

   b. Label the genotypes of the individuals in the chart.