

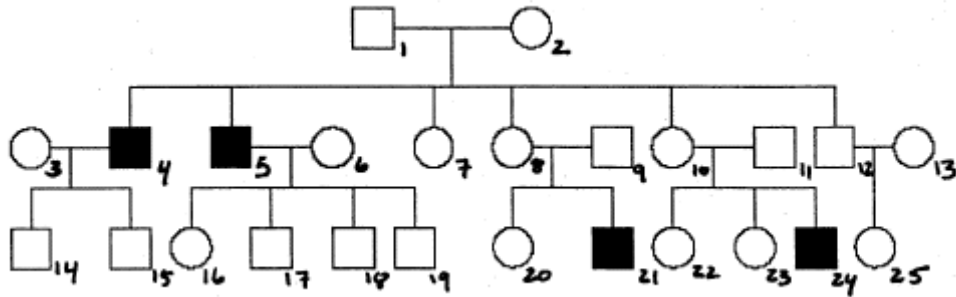
Introducing Pedigrees

The Basics

- A _____ chart follows genetic disorders within a family.
- Females are represented by _____, and males by _____.
- A filled-in shape represents that the individual has the _____.
- Anon-filled shape represents that the individual _____.
- A half-filled shape represents that the individual is a _____.
- Horizontal lines represent marriages and vertical lines represent the _____.
- Recessive disorders can skip a generation, while dominant disorders tend to not.
- If there are more males with a disorder than females, the disorder is probably _____.
- Mothers with sex-linked recessive disorders will always have _____ with the disorder.
- If males are carriers, the disease is _____.

An Example: Following Color-blindness

1. How can you tell whether this disorder is sex-linked and recessive?



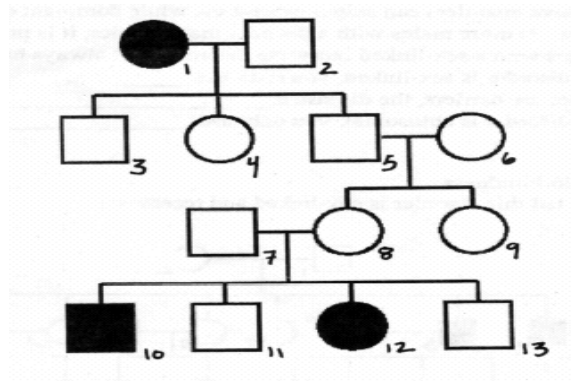
2. What are the genotypes and phenotypes of individuals 1 and 2?
 1. _____
 2. _____
3. Which individuals from above would be carriers? Partially fill in the appropriate shapes above.
4. Can any males in this family be carriers for colorblindness? EXPLAIN!!
5. If the P generation has another child, what is the percent likelihood that the child will be colorblind?



6. Explain why individual 24 is color-blind but his parents are not.
7. Individuals 20, 22, and 23 could be carriers. Explain why this is and how we can know for sure.

Practice

The Walker family pedigree, shown below, allows us to trace the inheritance of cystic fibrosis. Those with CF are unable to clear mucus from their lungs. Answer the following questions based on the pedigree.



1. Which individuals have cystic fibrosis (write the number)?
2. Is cystic fibrosis caused by a sex-linked or an autosomal gene? How do you know?
3. Is cystic fibrosis dominant or recessive? How do you know?
4. For which individuals do you know their genotype? What are they?
5. For which individuals do you need more information before determining their genotype?