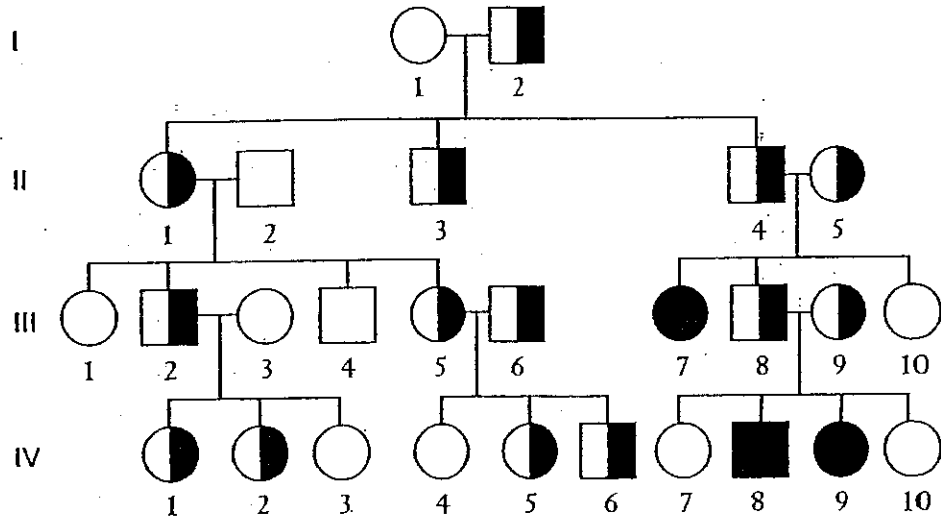
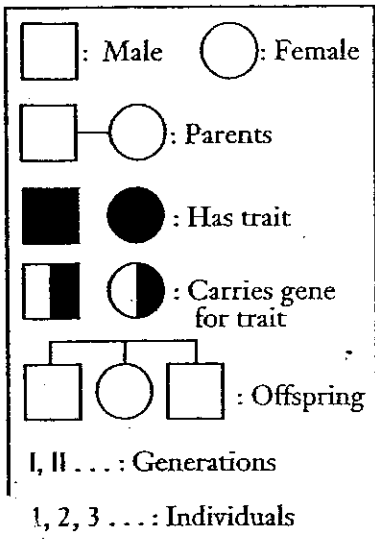


CHAPTER 14 PATTERNS OF HEREDITY

Section 14.2 Applied Genetics continued

Analyze the pedigree shown for sickle-cell anemia, a recessive blood disorder. Then answer the questions.



8. How many generations are represented in the pedigree? _____
9. In generation I, which parent is heterozygous for the recessive allele? _____
10. Which individual in generation II marries a spouse who is homozygous dominant? _____
11. In which generation does the first case of sickle-cell anemia appear? _____
12. Which generation contains the most male carriers? _____
13. Can two carriers produce an individual with sickle-cell anemia? _____
14. Can a normal homozygous individual produce offspring with sickle-cell anemia? _____
15. Which parents produce two children with sickle-cell anemia? _____

5. In your human characteristics lab, you saw that some traits are not completely dominant or recessive. This is the case with some genes for flower color. If you cross a pink flower (Rr) with a pink flower (Rr), you will get pink, red and white flowers. Draw a punnett square to show how this is possible. In this case, red is dominant and white is recessive.

a. What is the chance that the offspring will be pink?

b. What is the chance that the offspring will be white?

c. What is the chance that the offspring will be red?

6. Use a punnett square to show why the odds of having a boy are the same as the odds of having a girl.

a. Genotypes of possible offspring:

b. Phenotypes of possible offspring:

c. Odds of having a boy:

d. Odds of having a girl: