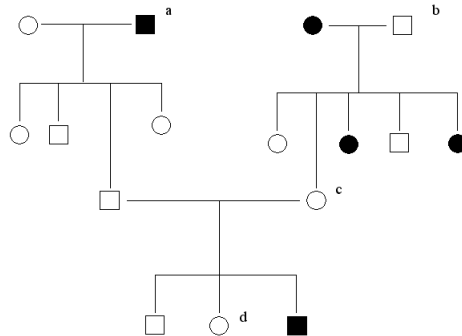
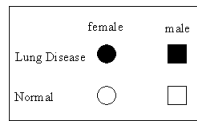
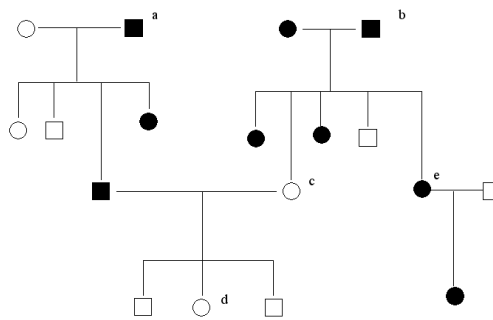
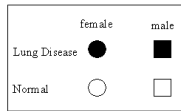


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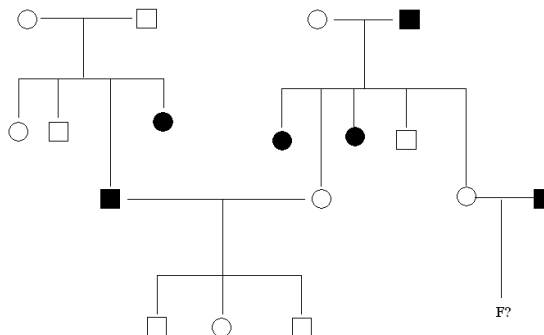
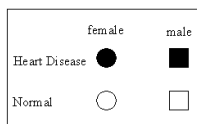
1. Above is a pedigree of albinism which is inherited in an autosomal recessive fashion. Work out the genotypes of the individuals marked a, b, c and d

Key:



2. Above is a pedigree of a family with inherited brain disorder, which is inherited in an autosomal dominant manner. Work out the genotypes of the individuals marked a, b, c and d and e

Key:



3. Above is a pedigree of inherited heart disorder which is inherited in an autosomal recessive fashion. What is the probability of the child labeled F to be born with the trait? (In order to work this out you must

understand the genotypes of the parents and the grandparents)

4) On the soap opera “The Young and the Restless”, several individuals suffer from a rapid aging syndrome in which a young child is sent off to boarding school and returns three months later an angry teenager. Victims have been known to age up to two decades in variations of the disorder. In the Newman family, siblings Nicholas and Victoria aged from ages six and eight to sixteen and eighteen within a few months. Their parents, Victor and Nikki, are not affected; in fact, they never seem to age at all.

- a. What is the mode of inheritance of the rapid aging disorder affecting Nicholas and Victoria?
- b. How do you know what the mode of inheritance is?
- c. Draw a pedigree to depict this portion of the Newman family.

5) Chands syndrome is an autosomal recessive condition characterized by very curly hair, underdeveloped nails, and abnormally shaped eyelids. In the pedigree below:

- a. Identify the individuals using Roman and Arabic numerals.
- b. Which individuals must be carriers?

6) Caleb has a double row of eyelashes, which he inherited from his mother as a dominant trait. His maternal grandfather is the only other relative to have the trait. Veronica, a woman with normal eyelashes, falls madly in love with Caleb, and they marry. Their first child, Polly, has normal eyelashes. Now Veronica is pregnant again and hopes they will have a child who has double eyelashes.

- a. What chance does a child of Veronica and Caleb have of inheriting double eyelashes?
- b. Draw a pedigree of this family.

7) Above is a depiction of sclerostiosis which is inherited as an autosomal recessive trait. Indicate those individuals (as a combination of Roman and Arabic numerals) in this pedigree who must be carriers. (The double line indicates marriage between relatives – consanguineous mating. A strike-through indicates dead individuals).

8) Draw a pedigree to depict the following family:

One couple has a son and a daughter with normal pigmentation. Another couple has one son and two daughters with normal pigmentation. The daughter from the first couple has three children with the son of the second couple. Their son and one daughter have albinism; their other daughter has normal pigmentation.