

Sex-Linked Traits

Use Punnett squares to answer each of the following problems:

1. A woman who is a carrier for haemophilia (recessive) marries a normal man. What will be the possible phenotype ratio of their children?

2. A woman who is a carrier for hemophilia marries a hemophiliac man. What will be the possible phenotypes of their children?

3. A hemophiliac woman has a phenotypically normal mother. What are the genotypes of the woman's mother and father?

4. A phenotypically normal woman has phenotypically normal parents. However, she has a hemophiliac brother.
 - a) What are her chances (percentage) of being a carrier for hemophilia?
 - b) If she is a carrier and marries a normal male, what is the chance of their child being a hemophiliac?

5. A phenotypically normal man who has a hemophiliac brother marries a homozygous normal woman. What is the probability that any of their children will have hemophilia?

6. If a normal sighted woman whose father was colour blind (recessive) marries a colour blind man:
 - a) What is the probability that they will have a son who is colour blind?
 - b) What is the probability that they will have a daughter who is colour blind?

7. What is the probability that a colour blind woman who marries a man with normal vision will have a colour blind child?

8. In fruit flies, white eyes is a sex-linked recessive trait. Normal eye colour is red. If a white-eyed male is crossed with a heterozygous female, what proportion of the offspring will have red eyes?