**SEX-LINKED TRAITS**

1. Hemophilia is a sex-linked trait found on the X chromosome. To get this disease, a person must have a recessive copy of the gene (h) on every X chromosomes. Predict the genotypic and phenotypic probabilities of the offspring if a woman who was a carrier for the disease had a baby with a man who had the disease.

Genotype of male parent:

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Genotype of female parent:

Results:

**Genotypes Phenotypes Probability**

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1. Baldness is also a sex-linked trait found on the X chromosome. To become bald, a person must have a recessive copy of the gene (b) on every X chromosome. Predict the genotypic and the phenotypic probabilities of the offspring if a woman who has no history of baldness in her family (B) had a baby with a man who was bald.

Genotype of male parent:

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Genotype of female parent:

Results:

**Genotypes Phenotypes Probability**

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1. In *Drosophila melanogaster* (fruit fly), the gene for red eyes, R, is dominant over the gene for white eyes, r. This gene is sex-linked. Determine the possible genotypes and phenotypes expected from the following crosses:
2. A heterozygous female and a red-eyed male

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**Genotypes: Phenotypes:**

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1. A heterozygous female and a white-eyed male

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**Genotypes: Phenotypes:**

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1. A homozygous dominant female and a red-eyed male

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**Genotypes: Phenotypes:**

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1. A homozygous dominant female and a white-eyed male:

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**Genotypes: Phenotypes:**

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1. In humans, the allele for normal colour-vision, C, is dominant over the allele for red-green colour-blindness, c. This trait is sex-linked and found on the X chromosome. The allele for brown eyes, B, is dominant over the allele for blue eyes, b. This is NOT a sex-linked chromosome. Calculate the probable genotype(s) and phenotype(s) of the children born to a blue-eyed woman who is heterozygous for colour-vision and a heterozygous brown-eyed man who is colour-blind.

Genotype of first parent: Genotype of second parent:

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1. In humans, the allele for normal blood clotting, H, is dominant over the allele for hemophilia. This is a sex-linked trait found on the X chromosome. A woman with normal blood clotting has four children. They are: a normal son, a hemophiliac son, and two normal daughters. The father has normal blood clotting. What is the probable genotype for each member of the family?
2. In cats, black colour is due to the allele B and orange colour is assigned the colour O. Orange is co-dominant with black and the heterozygous condition results in a colour known as calico (black, orange and white-spotted). The alleles of this gene are sex-linked. What kinds of offspring would be expected from a cross between a black male and calico female?