**Sex-linked Traits Practice Problems**

1. In fruit flies, the gene for white eyes is sex-linked recessive. (R) is red and (r) is white. Cross a white-eyed female with a normal red-eyed male.

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* 1. What percent of the males will have red eyes? White eyes?
  2. What percent of the females will have red eyes? White eyes?
  3. What **total percent** of the offspring will be white-eyed?
  4. What **percent** of the offspring will be carriers of the white eye trait?

1. Using the same information as for question #1, cross a heterozygous red-eyed female with a red-eyed male.

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* 1. What are the genotypes of each parent?
  2. What **fraction** of the children will have red eyes?
  3. What **fraction** of the children will have white eyes?
  4. What **fraction** of the female children will carry the white eyed trait?

1. In humans, hemophilia is a sex-linked recessive trait. If a female who is a carrier for hemophilia marries a male with normal blood clotting, answer the following questions.

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1. What fraction of the female children will have hemophilia?
2. What fraction of the female children will be carriers?
3. What fraction of the male children will have normal blood clotting?
   1. What fraction of the male children will be carriers?
   2. What fraction of the male children will have hemophilia?
4. Two normal visioned parents have a color-blind son. Give the genotype of both parents and the son.
5. In cats, the allele (B) produces black color but (b) produces a yellow color. These alleles are incompletely dominant to each other. A heterozygote produces a tortoise shell color. The alleles (B) and (b) are sex-linked as well. Cross a tortoise shell female with a yellow male.

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* 1. What percent of their offspring will be yellow?
  2. What percent of their offspring will be black?
  3. What percent of their offspring will be tortoise shell?
  4. Why is it impossible to have a tortoise shell male offspring?