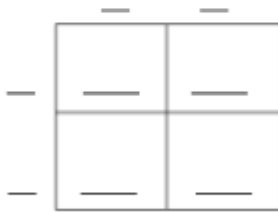


## Sex-Linked Traits Practice 2

\*\*\*Remember for sex-linked traits you write the alleles as the sex chromosome they are found on, with the allele for the trait as an exponent of the chromosome. (Ex.  $X^R$  and  $X^r$ )

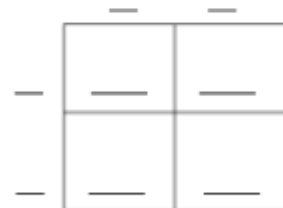
- How are sex-linked traits different than autosomal traits?
- Explain why sex-linked disorders are more common in males than females.
- Muscular dystrophy (MD) is a group of disorders that involve muscle weakness and loss of muscle tissue that gets worse over time. A certain form of muscular dystrophy (MD) is inherited as a sex-linked recessive gene. The dominant gene is "normal" or without MD. A normal man marries a homozygous normal woman. What are the possible genotypes & phenotypes of their children?



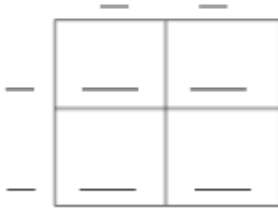
Possible Genotypes	Possible Phenotypes

- Jack has muscular dystrophy. Jane, Jack's wife does not have muscular dystrophy, but her father does. What fraction of their daughters would you expect to have muscular dystrophy? What fraction of their sons would you expect to have muscular dystrophy?

- Jack's genotype:
- Jane's genotype:
- Fraction of daughters with MD:
- Fraction of sons with MD:

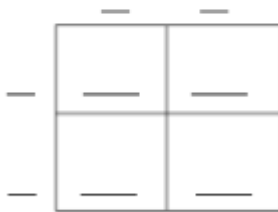


5. A woman who is a carrier for MD marries a man who has MD. What is the probability that they will have a child who is both male and has MD? What is the probability that they will have a child who is female and has MD?



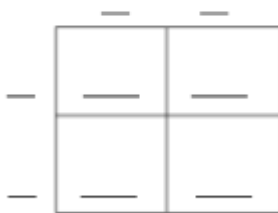
- Probability of son with MD:
- Probability of daughter with MD:

6. Clouded leopards are a medium sized, endangered species of cat, living in the very wet cloud forests of Central America. Assume that the normal spots, pictured here, are a dominant sex-linked trait found on the X chromosome. Dark spots are recessive. If a normal male clouded leopard was crossed with a dark spotted female leopard, what genotypes & phenotypes would be possible for their offspring?



Possible Genotypes	Possible Phenotypes

7. A dominant X-linked gene in mice causes a short, bent tail. The recessive allele produces normal tails. If a normal-tailed female is mated to a bent-tailed male, what are genotypes & phenotypes possible for the next generation of baby mice?



Possible Genotypes	Possible Phenotypes

Name \_\_\_\_\_

Block \_\_\_\_\_