Sex linked traits #1

In fruit flies, eye color is a sex-linked trait. Red is dominant to white. What are the sexes and eye colors of flies with the following genotypes?

X^RX^r X^RY X^rX^r

X^RX^R X^rY

Cross heterozygous red eyed female with a red eyed male. What are the phenotypes of the offspring? (remember the percentages are determined differently in sex linked traits)

	X	X
X		
Y		

Female Red eyed: %

Female White eyed: %

Male red eyed: %

Male white eyed: %

Show a cross between a white eyed female and a red-eyed male. What are the phenotypes of the offspring?

	X	X
X		
Y		

Female Red eyed: %

Female white eyed: %

Male red eyed %

Male white eyed %

In humans, hemophilia is a recessive sex-linked trait. Females can be normal, carriers, or have the disease. Males will either have the disease or not (but they won't even be carriers. Show a cross of a man who has hemophilia with a woman who is a carrier. What is the probability that their children will have the disease?

	X	X
X		
Y		

Children with the disease %

$X^H X^H$ = female, normal
$X^H X^h$ = female, carrier
$X^h X^h$ = female, hemophilia
$X^H Y$ = male, normal
$X^h Y$ = male, hemophilia

A woman who is a carrier for hemophilia marries a normal man. Show a cross.

	X	X
X		
Y		

a. If they have a daughter, what are the possible phenotypes? (check all that apply)
Normal carrier hemophilia

b. If they have a son, what are the possible phenotypes?
Normal carrier hemophilia

A girl inherited colorblindness, which is a sex-linked trait. It is probable, therefore, that .....

Both parents had one colorblindness gene

Only one parent had the color blindness gene

The gene in the mother guaranteed the girl having the disease

The father did not have the recessive gene

A colorblind man marries a woman who is neither colorblind nor a carrier of the trait. Which statement best describes their probable offspring?

All the boys will be colorblind

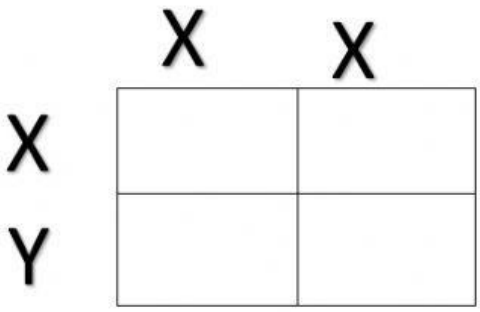
All the girls will be carriers but not have the disease

All the girls will be colorblind

Half the boys will carry the gene for colorblindness

Show a cross of a red-eyed female (heterozygous) and a red eyed male.

a. What are the genotypes of the parents? Mom Dad



White eyed, male %

White eyed, female %

Red eyed, male %

Red eyed, female %

b. Math: What if in the above cross, 100 males were produced and 200 females. How many total red-eyed flies would there be?