

# Sex Linked Traits

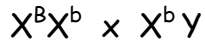
Name \_\_\_\_\_



Sorry, I'm colour-blind:  
Is she wearing a Red Riding-Hood?

1. a) What are the two sex chromosomes? \_\_\_\_\_ and \_\_\_\_\_
- b) Which of these chromosomes is larger than the other? \_\_\_\_\_
- c) Sex linked traits are found only on the \_\_\_\_\_ chromosome.
- d) Since males only have one X chromosome they only need to have \_\_\_\_\_ recessive allele to be affected by it.

2. Cross a carrier (heterozygous) woman with normal vision with a colorblind man.



Legend	Parents	Cross it	Genotypic Ratio	Phenotypic Ratio								
$X^B X^B$ - normal girl	$X^B X^b$ x $X^b Y$	<table border="1" style="width: 100px; height: 100px;"> <tr><td style="width: 50px; height: 50px;"></td><td style="width: 50px; height: 50px;"></td></tr> <tr><td style="width: 50px; height: 50px;"></td><td style="width: 50px; height: 50px;"></td></tr> <tr><td style="width: 50px; height: 50px;"></td><td style="width: 50px; height: 50px;"></td></tr> <tr><td style="width: 50px; height: 50px;"></td><td style="width: 50px; height: 50px;"></td></tr> </table>										
$X^B X^b$ - normal (carrier) girl												
$X^b X^b$ - colorblind girl												
$X^B Y$ - normal boy												
$X^b Y$ - colorblind boy												

3. Bill and Bertha want to know if they have a chance at passing on colorblindness to their kids.  
Bill and Bertha are not colorblind. However, Bertha's father was colorblind (she's a carrier).

Legend	Parents	Cross it	Genotypic Ratio	Phenotypic Ratio								
$X^B X^B$ -		<table border="1" style="width: 100px; height: 100px;"> <tr><td style="width: 50px; height: 50px;"></td><td style="width: 50px; height: 50px;"></td></tr> <tr><td style="width: 50px; height: 50px;"></td><td style="width: 50px; height: 50px;"></td></tr> <tr><td style="width: 50px; height: 50px;"></td><td style="width: 50px; height: 50px;"></td></tr> <tr><td style="width: 50px; height: 50px;"></td><td style="width: 50px; height: 50px;"></td></tr> </table>										
$X^B X^b$ -												
$X^b X^b$ -												
$X^B Y$ -												
$X^b Y$ -												

4. Hemophilia is a sex-linked trait. Sylvia knows that she is a carrier for the disease and that her husband is normal.

Legend	Parents	Cross it	Genotypic Ratio	Phenotypic Ratio
	$X^{H}X^{h}$  $\times$  $X^{H}Y$	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border-left: 1px solid black; border-right: 1px solid black; height: 100px; width: 50px;"></div> <div style="border-left: 1px solid black; border-right: 1px solid black; height: 100px; width: 50px;"></div> </div> <hr style="width: 100%;"/> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border-left: 1px solid black; border-right: 1px solid black; height: 100px; width: 50px;"></div> <div style="border-left: 1px solid black; border-right: 1px solid black; height: 100px; width: 50px;"></div> </div>		

5. Male pattern baldness is another recessive sex-linked trait. Wilbur's Mother is bald, and his father isn't. Cross Wilbur with a woman who is a carrier for baldness.

Legend	Parents	Cross it	Genotypic Ratio	Phenotypic Ratio
		<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border-left: 1px solid black; border-right: 1px solid black; height: 100px; width: 50px;"></div> <div style="border-left: 1px solid black; border-right: 1px solid black; height: 100px; width: 50px;"></div> </div> <hr style="width: 100%;"/> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border-left: 1px solid black; border-right: 1px solid black; height: 100px; width: 50px;"></div> <div style="border-left: 1px solid black; border-right: 1px solid black; height: 100px; width: 50px;"></div> </div>		



In male pattern baldness, hair recedes in an "m" shape, the crown bald patch eventually meeting the top points to form a horseshoe shape

