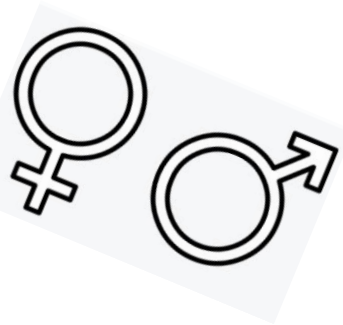
Notes: X-Linked Inheritance

(Outcome 10)

Biology 12 **Name:**

- There are _____ chromosomes in the human body. The last set of chromosomes defines a person's _____.
- If a person is biologically female, they will contain two _____ chromosomes (_____).
- If the person is biologically male, they will contain an _____ and a _____ chromosome (_____).



X-Linked Inheritance

- When a gene being studied is on the X chromosome, scientists use X and an exponent to show what _____ is on that particular chromosome.

When you complete a genetics problem with an X-linked gene, you need to specify which progeny are _____and _____.

- The _____ chromosome contains the majority (~1100 genes) on it while the _____ chromosome contains only a few (~78 genes).
- The human _____ chromosome has many repeated _____ sections and only a few genes. One gene is the SYR gene, the most important gene in testis _____.

Example Genetic Cross:

Mice with the recessive "greasy" allele (n) have shiny fur. Normal fur is not "greasy-looking" and is caused by a dominant allele (N). The coat-shininess gene is on the X chromosome. If a normal male is crossed to a carrier female, what percent of their male progeny will have greasy fur?

1 Which trait/allele is dominant?

_____

Which trait/allele is recessive?

_____

2

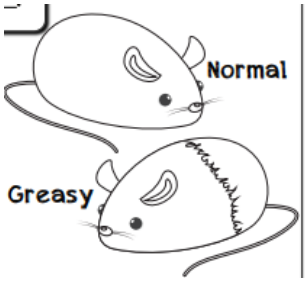
x

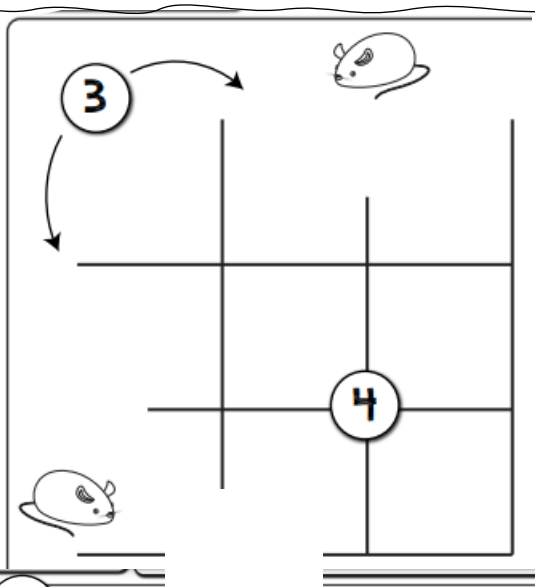
Parent #1: Parent #2:

Phenotype: _____ _____

Genotype: _____ _____

Alleles: _____ _____





5 Genotype Ratio:

: :

_____ _____ _____ _____

6 Phenotype Ratio:

: : :

_____ _____ _____ _____

_____

Example Genetic Cross:

Colour blindness is a x-linked trait which is why colour blindness is much more common in males as the trait only needs to show up on the X-chromosome where for females it has to show up on both X-chromosomes. What would the genotypes and phenotypes be for the children of a normal female carrier for colour-blindness and a normal male?

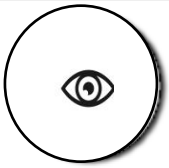
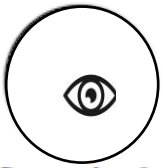
1 Which trait/allele is dominant?

_____

Which trait/allele is recessive?

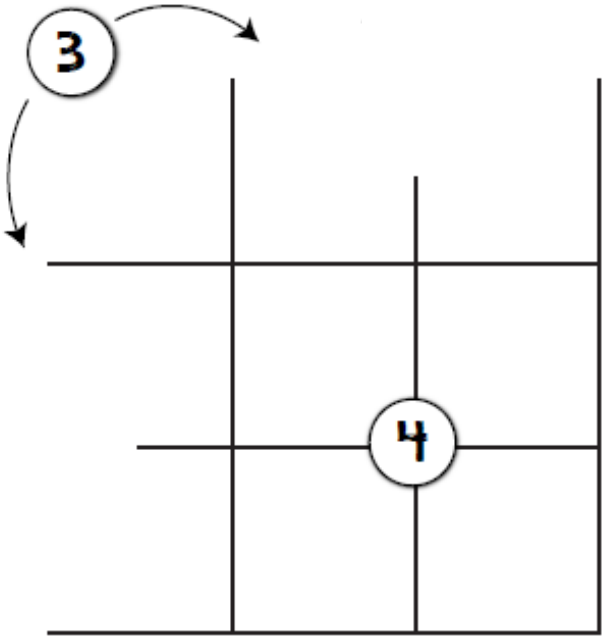
_____

2

 X 

	Parent #1:	Parent #2:
Phenotype:	_____	_____
Genotype:	_____	_____
Alleles:	_____	_____

3



5 Genotype Ratio:

_____ : _____ : _____ : _____

6 Phenotype Ratio:

_____ : _____ : _____ : _____

_____

_____