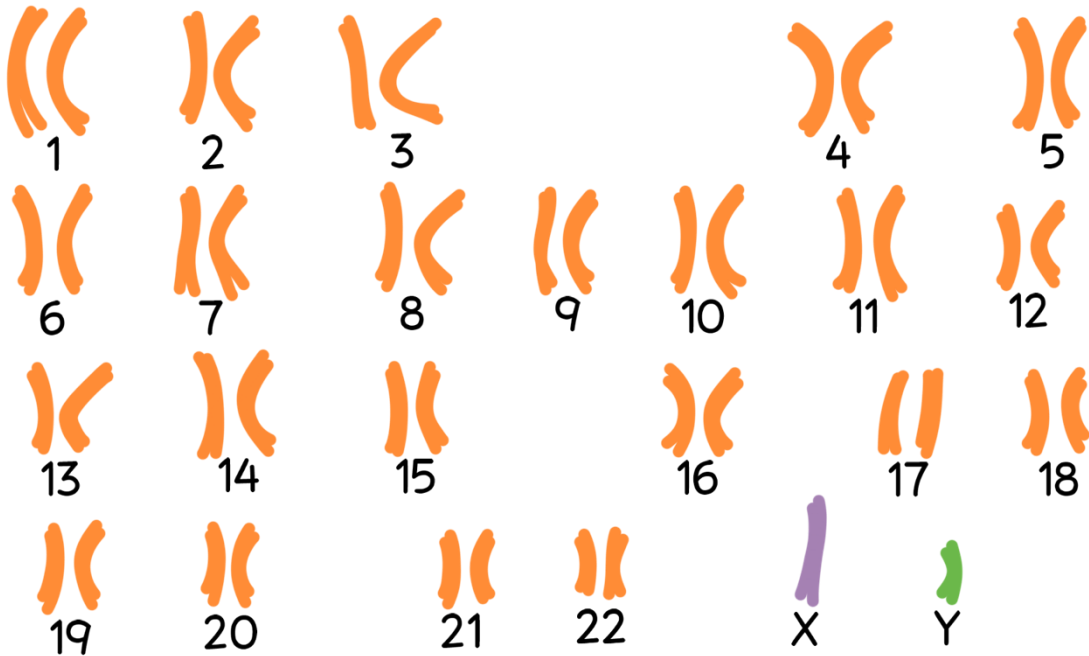


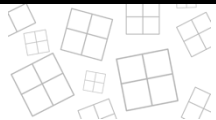
NAME: _____

Amoeba Sisters Video Recap: Punnett Squares and Sex-Linked Traits (UPDATED)

Below is an example of a human karyotype. Questions below correspond to this individual's karyotype.



- How many chromosomes in total are there in this individual's karyotype? _____
- How many chromosome pairs are there? (Note: count the sex chromosomes as a pair!) _____
- Circle the sex chromosomes. How many sex chromosomes are there? _____
- How many autosomes (chromosomes that aren't sex chromosomes) are there? _____
- Is this a general karyotype of a male or female? _____



For the following questions, consider a trait that is sex-linked recessive and on the X chromosome. The letter "b" will be used for this allele.

6. Circle the genotype(s) that would generally denote a **female who has this sex-linked recessive trait.**

BB Bb bb $X^B X^B$ $X^B Y^B$ $X^B X^b$ $X^b Y$ $X^b X^b$ $X^b Y^b$ $X^B Y$

7. Circle the genotype(s) that would generally denote a **female who carries the sex-linked allele but does not have the sex-linked recessive trait.**

BB Bb bb $X^B X^B$ $X^B Y^B$ $X^B X^b$ $X^b Y$ $X^b X^b$ $X^b Y^b$ $X^B Y$

8. Circle the genotype(s) that would generally denote a **female who neither has the sex-linked recessive trait nor carries the allele.**

BB Bb bb $X^B X^B$ $X^B Y^B$ $X^B X^b$ $X^b Y$ $X^b X^b$ $X^b Y^b$ $X^B Y$

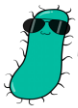
9. Circle the genotype(s) that would generally denote a **male who has the sex-linked recessive trait.**

BB Bb bb $X^B X^B$ $X^B Y^B$ $X^B X^b$ $X^b Y$ $X^b X^b$ $X^b Y^b$ $X^B Y$

10. Circle the genotype(s) that would generally denote a **male who does not have the sex-linked trait.**

BB Bb bb $X^B X^B$ $X^B Y^B$ $X^B X^b$ $X^b Y$ $X^b X^b$ $X^b Y^b$ $X^B Y$



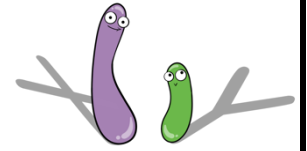


NAME: _____

Amoeba Sisters Video Recap: Punnett Squares and Sex-Linked Traits (UPDATED)

For each statement below, write "true" or "false."

If false, please *correct* the statement underneath.



11. _____ Many traits are not sex-linked and are instead on **autosomes**. In Punnett squares that are using alleles on autosomes, you will *not* put sex chromosomes around the Punnett square.

12. _____ Sex-linked *recessive* traits are generally more common in males than females.

13. _____ Most Punnett square problems using sex-linked traits will involve genes on the Y chromosomes.

14. Red-green colorblindness is a sex-linked recessive trait.

Please *show* in the Punnett square how a male who has this condition could have biological parents who both do not.

Using the filled in Punnett square, *explain* how a male who has this condition could have biological parents who both do not?

15. **Complete the boxes of the Punnett square below.**

	X	Y
X		
X		

Using the filled in Punnett square, explain whether it is the male or female parent who generally determines the sex of the baby?

16. Some disorders are sex-linked dominant on the X chromosome. Dominant disorders generally only need one dominant allele present. Using the allele "D" on the X chromosome, show a cross with a female who does not have a dominant sex-linked disorder (X^dX^d) with a male who does.

In this particular cross, was this condition more common in female or male offspring? Why?

