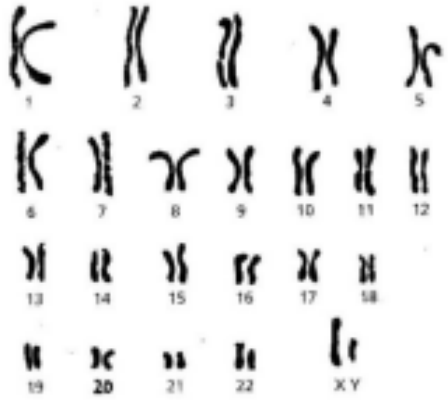
Name: _____

Chromosomes and Karyotypes

1. Define autosome. _____
_____

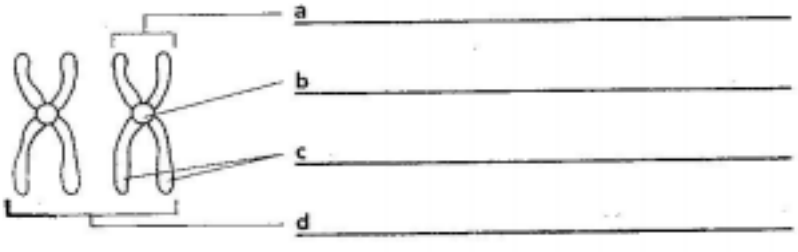
2. What are the 2 kinds of sex chromosomes? _____ and _____
3. Define diploid. _____
_____
4. Define haploid. _____
_____
5. Humans have 46 chromosomes ***total*** in all somatic (body/tissue) cells. How many of these chromosomes are autosomes? _____
6. If an organism has a diploid number of 16, how many chromosomes will be found in one of its skin cells? _____
7. If an organism has a diploid number of 20, how many chromosomes will its sex cells have? _____
8. During cell division, the DNA in a eukaryotic cell is tightly packed and organized into structures called _____.

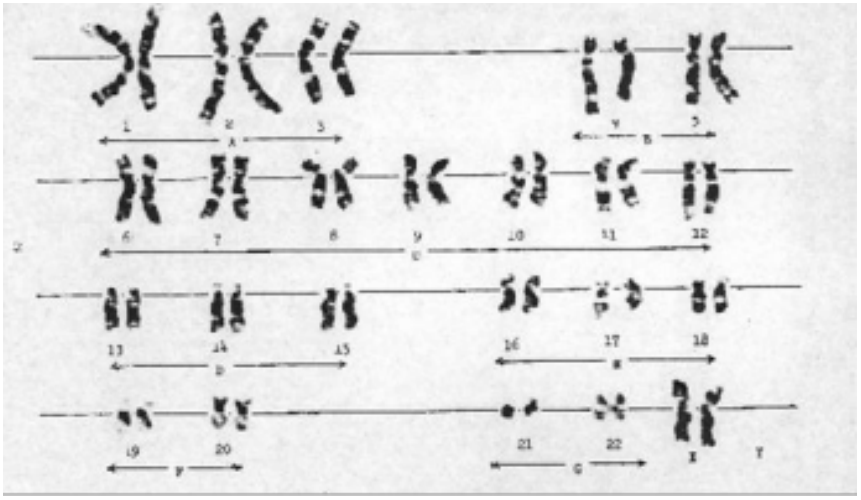


Answer questions 9-13 using the diagram to the left.

9. What is the picture to the left called? _____
10. How many total pairs of chromosomes do you see? _____
11. How many total autosomes are there? _____
12. How many total sex chromosomes are there? _____
13. What is the gender of the organism? _____

14. The diagram to the right shows structures isolated from the nucleus of a eukaryotic cell dividing. Label each structure or pair of structures in the spaces provided.





KARYOTYPE A

Answer questions 15-20 based on Karyotype A.

15. How many **pairs** of chromosomes do you see? _____

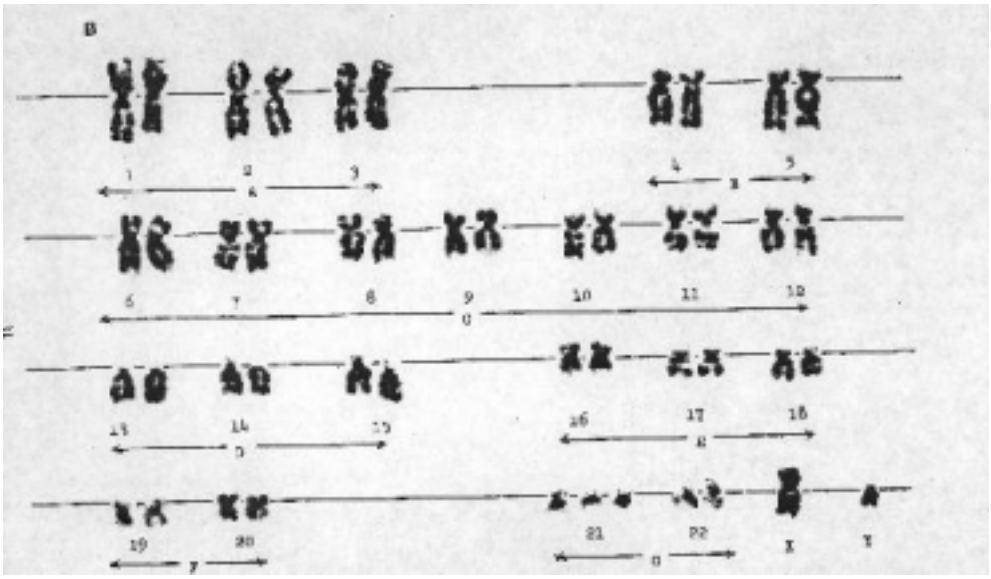
16. What is the sex of this organism? _____ How do you know? _____

17. If you start with chromosome number 1 and go until chromosome number 22 you will see a trend in size correlation. Describe this trend. _____

18. How many chromosomes will be found in an egg cell from this individual? _____

19. What are these numbered **pairs** of chromosomes called? _____

20. Every karyotype is specially named. This naming system is based on three things: 1) The number of chromosomes, example: 46. 2) The sex of the organism, example: XX. 3) And any extra chromosomes that would cause a genetic defect, example: +18. What is the name of this particular karyotype? _____ _____ _____



KARYOTYPE B

Answer questions 21-26 based on Karyotype B.

21. How many pairs of autosomes are there? _____

22. Are there any TRISOMY'S (three chromosomes instead of a pair) in this karyotype? _____ If so, which chromosome pair is a trisomy? _____

23. How many pairs of sex chromosomes are there? _____

24. What is the sex of this organism? _____

25. Describe the difference between the X and Y chromosomes. _____

_____

26. What is the name of this particular karyotype? _____ _____ _____