

**DIPLOID and HAPLOID WORKSHEET**

DIPLOID body cells always have an even number of chromosomes because the chromosomes are found in pairs (2n).  
HAPLOID body cells only contain half the number of chromosomes (n).

Complete the following table of chromosome number in various species.

Species Name	# of chromosomes in diploid cells 2n	# of chromosomes in haploid cells n
Human	2n = 46	n = 23
House Fly	2n = 12	n = 6
monkey	2n = 42	n = 21
Bat	2n = 44	n = 22
King Crab	2n = 208	n = 104
Goat	2n = 60	n = 30
Rice	2n = 24	n = 12
Armadillo	2n = 64	n = 32
Chicken	2n = 78	n = 39
Leopard frog	2n = 26	n = 13

- What is the meaning of diploid? having two sets of chromosomes (1 from each parent, usually)
- What cells in living organisms are diploid? somatic cells (all body cells except sex cells)
- What is the meaning of haploid? having one set of chromosomes
- What cells in living organisms are haploid? sex cells (sperm, egg)
- What does the symbol 2n represent? diploid number
- What does the symbol n represent? haploid number
- The 2n number for dogs is 78. How many chromosomes would you find in a dog's blood cell? 78
- How many chromosomes would you find in a dog's sperm cell? 39
- If the sperm cell of a fruit fly has 4 chromosomes, then the number of chromosomes in each body cell is:  
a) 2      b) 4      c) 6      **d) 8**      e) 16
- Of the following cells, the only one to have the haploid number of chromosomes is:  
a) skin      b) muscle      c) nerve      d) blood      **e) ovum**

12. Put these parts of cells from the human body in order, from smallest (1) to biggest (4):

Gene 1 Nucleus 4 DNA 3 Chromosome 2

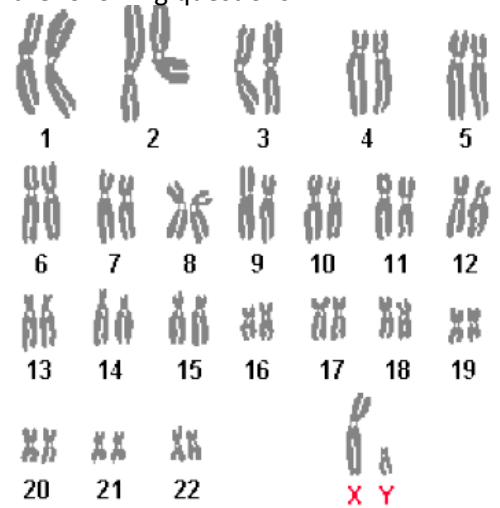
The picture on the right is of a **human** karyotype. Use the karyotype to answer the following questions.

13. How many pairs of chromosomes does this person have? 23

14. Is this person a male or female? male How do you know?  
sex chromosomes are XY

15. How many chromosomes are in a human's body cells? 46

16. How many chromosomes are in a human's sex cells? 23



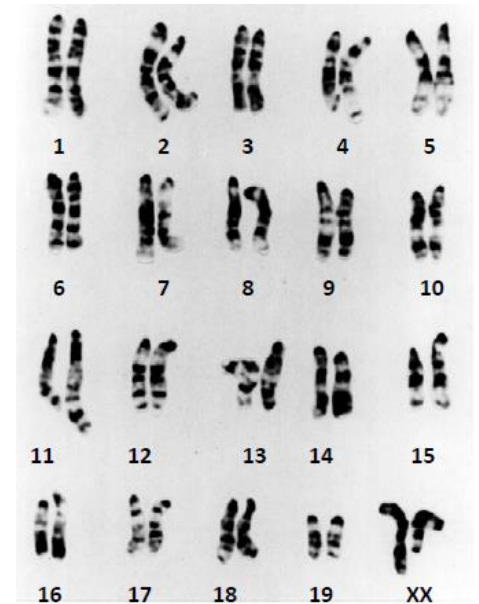
The picture on the right is of a **rat** karyotype. Use the karyotype to answer the following questions.

17. How many pairs of chromosomes does this rat have? 20

18. Is this rat a male or female? female How do you know?  
sex chromosomes are XX

19. How many chromosomes are in a rat's body cells? 40

20. How many chromosomes are in a rat's sex cells? 20



21. In the picture below,

A. Color the centromere RED

B. Color one sister chromatid GREEN

C. Color one sister chromatid BLUE

D. Label the bracket with the name of this structure

