

### COMPARING CELL CYCLE (MITOSIS) AND MEIOSIS

1. What is the end result of Meiosis (3 answers) ? \_\_\_\_\_  
\_\_\_\_\_
2. What is the end result of the Cell Cycle (mitosis) (3 answers) ? \_\_\_\_\_  
\_\_\_\_\_
3. How many **pairs** of chromosomes are in each human body cell? \_\_\_\_\_
4. How many chromosomes are in each egg or sperm cell (gametes)? \_\_\_\_\_
5. How many chromosomes are in each somatic cell? \_\_\_\_\_
6. How many chromosomes are in each gamete? \_\_\_\_\_
7. In the chart below, fill in the chromosome number and the process for each cell type.

CELL TYPE	SOMATIC OR GAMETE	NUMBER OF CHROMOSOMES IN CELL	PROCESS USED TO MAKE CELL (CELL CYCLE/MITOSIS OR MEIOSIS)
Liver			
Sperm			
Heart			
Egg			

8. (True or False): All of an organism's cells have the same DNA.
9. Cells must divide because, compared to small cells, large cells:
  - a. Make more demands on what part of the cell? \_\_\_\_\_
  - b. Have trouble moving \_\_\_\_\_ in and \_\_\_\_\_ out.

Complete the following chart.

	CELL CYCLE/MITOSIS	MEIOSIS
10. Number of resultant daughter cells		
11. Number of DNA replications		
12. Number of chromosomes compared to the original.		
13. Type of cell are the resultant cells		
14. Number of cell division that occur		
15. Haploid or Diploid cells		
16. Number of nucleus divisions		

Answer the following questions:

17. A dog has a diploid number of 78, what is the haploid number? \_\_\_\_\_ Which cell contains the haploid number? \_\_\_\_\_

18. A photomicrograph of onion root tip is undergoing mitosis as shown.

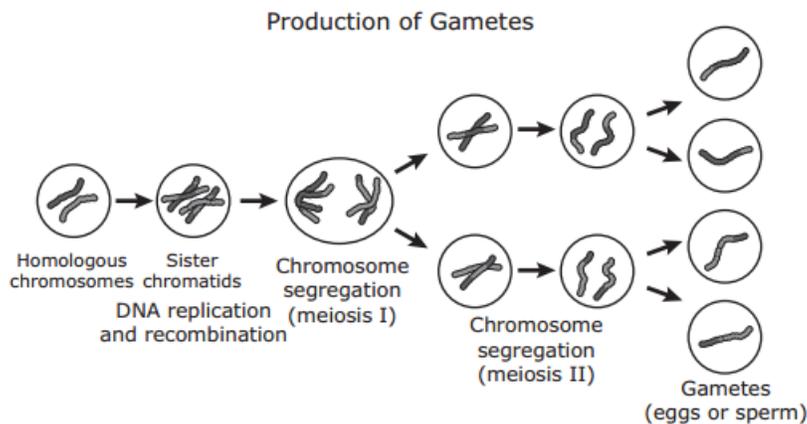
Which phase of mitosis is occurring in the cell indicated by the arrow?

- a. Prophase
- b. Metaphase
- c. Anaphase
- d. Telophase



19. Telophase is a stage of cellular process that begins after the chromosomes have moved to opposite poles of the cell. During which cellular process does telophase occur?

- a. Translation
- b. Interphase
- c. Transcription
- d. Mitosis



20. The diagram above shows the process of meiosis. The segregation that occurs during meiosis results in a -

- a. decrease in the total number of cells per organism
- b. reduction in the number of chromosomes per cell
- c. single fertilized egg cell
- d. group of genetically identical cells