

Name: Key

Period: \_\_\_\_\_

### Cell Division and Meiosis Review

1. What type of cell undergoes meiosis? gamete cells or **somatic cells**

2. For each of the following, is the cell diploid or haploid?

Somatic cell diploid

Gamete haploid

Egg cell haploid

Muscle cell diploid

Sperm cell haploid

Heart cell diploid

Bone cell diploid

3. If the diploid number in a white blood cell of an organism is 62, how many chromosomes are there in the egg of this organism?

$$\begin{array}{r} 31 \\ 2 \overline{) 62} \\ \underline{62} \\ 0 \end{array}$$

$$\textcircled{31}$$

4. The muscle cells of a dog have 78 chromosomes. How many chromosomes will each of the following have:

dog's skin cell 78

dog's egg cell 39

dog's liver cell 78

$$\begin{array}{r} 39 \\ 2 \overline{) 78} \\ \underline{78} \\ 0 \end{array}$$

5. What is the difference between haploid, diploid, and a zygote?

$$\frac{1}{2}n \quad 2n \quad 2n$$

6. Why does meiosis reduce the number of chromosome in gametes (think fertilization)?

fertilization =  $n + n = 2n$  (zygote)

b/c in fertilization  $23 + 23 = 46$

$$0 + 0 = 46 \text{ (zygote)}$$

7. An egg cell is a (gamete or zygote), and is (haploid or diploid).

8. Asexual reproduction of cells is accomplished by:

- a) mitosis
- b) meiosis

- c) cytokinesis
- d) photosynthesis

9. Sexual reproduction of cells is accomplished by:

- a) mitosis
- b) meiosis

- c) cytokinesis
- d) photosynthesis

10. Which process(es) begin with DNA replication?

- a) mitosis
- b) meiosis

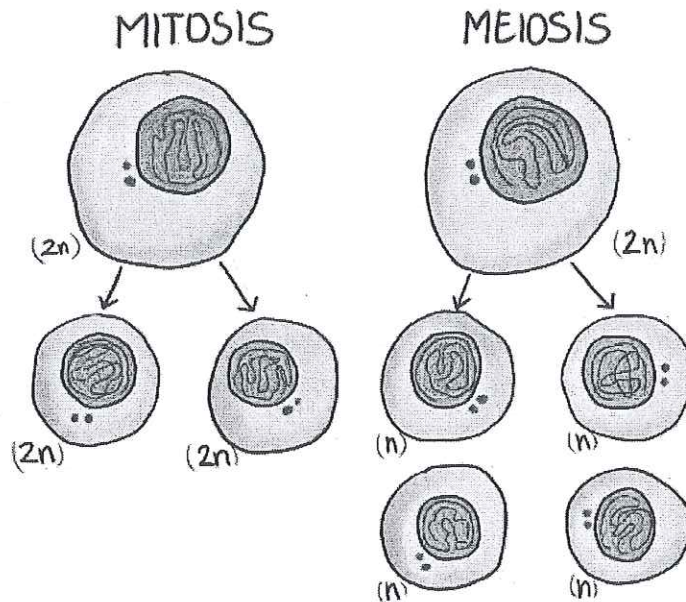
- c) both mitosis and meiosis
- d) neither mitosis or meiosis

11. Which process(es) end with cytokinesis?  
 a) mitosis  
 b) meiosis  
 c) both mitosis and meiosis  
 d) neither mitosis or meiosis
12. Which process(es) contain only 1 division of cells?  
 a) mitosis  
 b) meiosis  
 c) both mitosis and meiosis  
 d) neither mitosis or meiosis
13. Which process(es) contain 2 divisions of cells?  
 a) mitosis  
 b) meiosis  
 c) both mitosis and meiosis  
 d) neither mitosis or meiosis
14. Which process(es) result in 2 identical cells?  
 a) mitosis  
 b) meiosis  
 c) both mitosis and meiosis  
 d) neither mitosis or meiosis
15. Which process(es) result in 4 different cells?  
 a) mitosis  
 b) meiosis  
 c) both mitosis and meiosis  
 d) neither mitosis or meiosis
16. Which process(es) occur in body cells (such as skin, muscle, and bone)?  
 a) mitosis  
 b) meiosis  
 c) both mitosis and meiosis  
 d) neither mitosis or meiosis
17. Which process(es) occur to make gametes (sex cells)?  
 a) mitosis  
 b) meiosis  
 c) both mitosis and meiosis  
 d) neither mitosis or meiosis
18. What is the process of sperm and egg combining?  
 a) fertilization  
 b) nondisjunction  
 c) mutation  
 d) crossing over

Complete the table by checking the correct column(s) for each description.

Description	Mitosis	Meiosis
19. Involved in the production of gametes		X
20. Involved in growth and repair	X	
21. Promotes genetic variation in organisms		X
22. Consists of one nuclear division	X	
23. Produces daughter cells that are genetically identical	X	
24. Involves two sets of nuclear divisions		X
25. Produces daughter cells that are not identical		X
26. Results in four haploid gametes		X

27. Both diagrams below show cell division. Label them as either mitosis or meiosis.

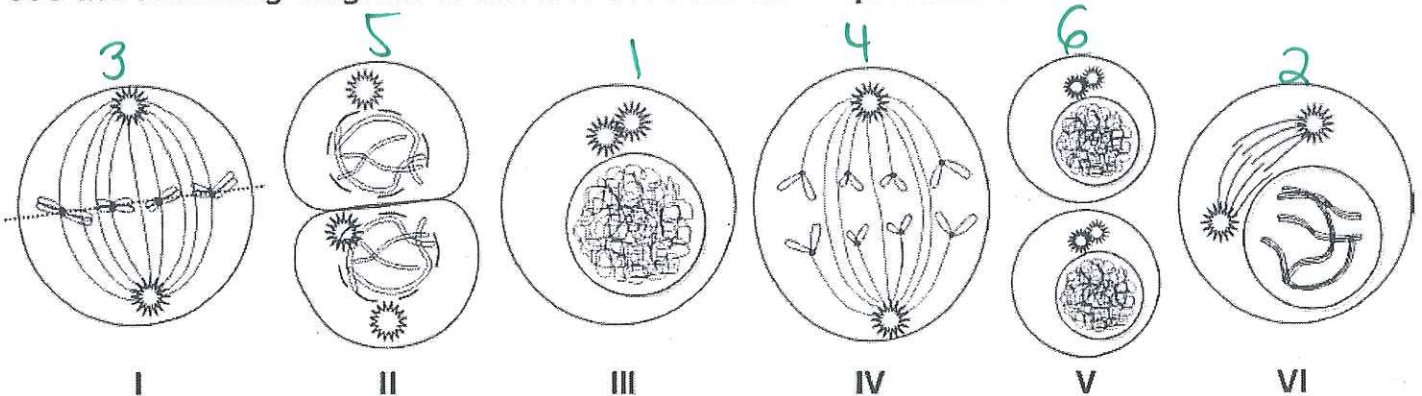


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28. How are meiosis and mitosis different/same?

*mitosis = 2 cells, identical, somatic cells, 2n, 1 division*  
*meiosis = 4 cells, genetic variety, gametes, n, 2 divisions*

Use the following diagram to answer the next three questions.



29. Refer to the diagram. Arrange the stages in order.

- a) I, II, III, IV, V, VI
- b) VI, II, I, IV, V, III

- c) III, VI, I, IV, II, V
- d) V, II, IV, I, II, VI

30. What is the name of this process?

- a) metaphase
- b) mitosis

- c) meiosis
- d) mucousis

*- 2 cells (identical) at the end*

