

Mitosis and Meiosis

Part 1. Vocabulary. (10 Points). Define FIVE of the vocabulary below. I will grade the first five that you define.

Mitosis:

Meiosis:

Chromatid:

Homologous Chromosomes:

Gamete:

Chromosome:

Centromere:

Crossing Over:

Spindle:

Centrosome:

Part 2. True/False (10 Points). Mark answers as true or false. If a statement is false, correct the statement so that it is true.

_____ 1. During Mitosis, a cell that has 24 chromosomes at the beginning of the cell cycle will have 12 chromosomes at the end of the cell cycle.

_____ 2. If you extracted and looked at your liver cells, you would find most of them in Interphase.

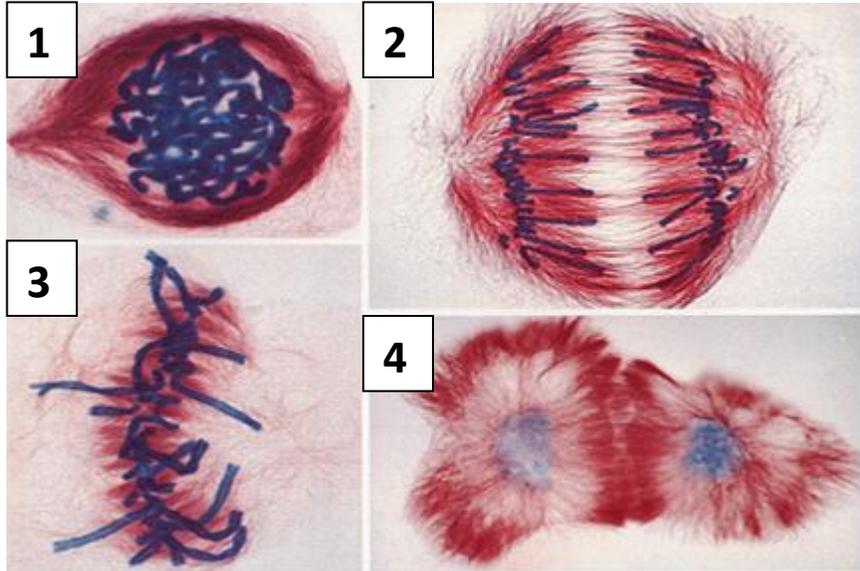
_____ 3. Mitosis produces gametes, or sex cells, and meiosis produces somatic, or body cells.

_____ 4. A cancerous growth can develop if meiosis is left uncontrolled.

_____ 5. The chromosomes during metaphase of mitosis and metaphase I of meiosis are grouped exactly the same.

Part 3. Multiples choice (5 Points). Write your answer in the bland provided AND circle your answer.

_____ 1. What are the stages in the order of the pictures in the order they are labeled.



- a. Prophase, anaphase, metaphase, telophase
- b. Prophase, metaphase, anaphase, telophase
- c. Metaphase, telophase, anaphase, prophase
- d. Telophase, metaphase, anaphase, prophase

_____ 2. A cell is in the process of replicating DNA. What stage of Interphase is the cell in?

- a. S Phase
- b. G1 Phase
- c. G2 Phase
- d. Prophase

_____ 3. Mitosis results in two _____ cells, and meiosis results in _____ haploid cells.

- a. haploid/four
- b. diploid/two
- c. diploid/four
- d. haploid/two

_____ 4. What forms during telophase of mitosis and meiosis in plant cells?

- a. Cell membrane
- b. Cell plate
- c. Plasmodesmata
- d. None of the above

_____ 5. The diploid number of chromosomes in humans is 46. What is the haploid number of chromosomes?

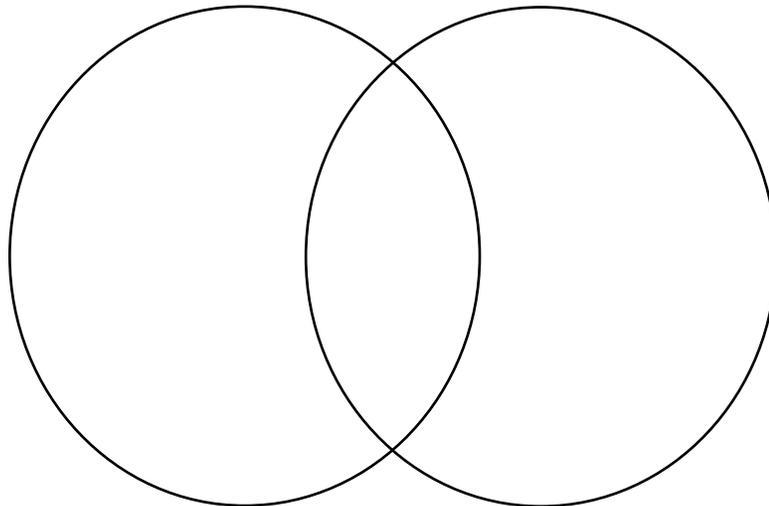
- a. 92
- b. 46
- c. 12
- d. 23

Part 4. Short answer (10 Points). Write all responses in sentence form.

1. Describe how prophase in mitosis is different and similar to prophase in meiosis I and II. Draw a picture to support your answer.

2. What major events during meiosis lead to genetic recombination in sex cells? Why?

3. Compare and contrast mitosis and meiosis (2 points for each).



4. Why is meiosis important for the production of offspring?

5. Describe how meiosis is different for males and females? What is produced by the end?
