

Answer Questions

On the lines provided, under the appropriate number of sections I (mitosis) and sections II, including cytokinesis in the parent organism.

- 1. 4th metaphase I, _____ kinetochore chromosomes lining in the center of the cell
- 2. 2nd metaphase I, _____ spindle fibers pull kinetochore pairs to ends of the cell
- 3. 4th metaphase II, _____ 4 haploid (2n) daughter cells form
- 4. 2nd metaphase _____ cells undergo a round of DNA replication
- 5. 1st metaphase II, _____ same chromosome separate from each other
- 6. 4th metaphase II, _____ 4 haploid (2n) daughter cells form
- 7. 1st metaphase I, _____ spindle fibers attach to the kinetochore-chromosome pairs
- 8. 4th metaphase II _____ individual chromosomes move to each end of the cell
- 9. 2nd metaphase I, _____ crossing-over (2 and 3 arms)

20. Compare the number and type of cells that result from mitosis vs. meiosis. Mitosis is diploid cells, that are somatic cell pairs that are not gametes and identical to each other and to the parent cell.

Meiosis makes 4 haploid cells that are gametes and are all different from each other and from the parent cell.

21. How do the genetic contents of cells resulting from mitosis and meiosis differ? Mitosis are identical, while meiosis is not identical.

22. If a diploid cell containing 20 chromosomes undergoes meiosis, how many chromosomes will each daughter cell have? 10

Read each statement, then on the line write down the phase of mitosis or meiosis that the action occurs. If the action occurs in both, write both. The line can be from the top.

- 1. _____ metaphase I occurs: kinetochore chromosomes lining up in the center of the cell
- 2. metaphase II occurs; metaphase occurs: _____ The individual chromosomes move apart.
- 3. metaphase I occurs: _____ spindle fibers pull kinetochore pairs to ends of the cell
- 4. metaphase II occurs: _____ 4 haploid (2n) daughter cells form
- 5. metaphase occurs and mitosis: _____ cells undergo a round of DNA replication
- 6. metaphase occurs; metaphase II occurs (no pairs): _____ The chromosomes that separate the middle of the cell.
- 7. prophase I, Prophase II occurs; prophase occurs: _____ Chromosomes become visible.
- 8. metaphase occurs; metaphase II occurs: _____ same chromosome separate from each other
- 9. _____ metaphase I occurs: _____ 4 haploid (2n) daughter cells form
- 10. _____ metaphase II occurs; metaphase occurs: _____ same chromosome separate and individual chromosomes.
- 11. metaphase I and II occurs; metaphase occurs: _____ Same number of chromosomes.
- 12. _____ prophase I occurs: _____ spindle fibers attach to the kinetochore-chromosome pairs
- 13. _____ metaphase II occurs; metaphase occurs: _____ individual chromosomes move to each end of the cell
- 14. prophase I and II occurs; prophase occurs: _____ The nuclear envelope and the nuclear membrane breaks down.
- 15. _____ prophase II occurs; prophase occurs: _____ Each chromosome is reconnected a spindle fiber.