

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 2 over)

20. Compare the number and type of cells that result from mitosis vs. meiosis. Mitosis 2 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

Draw 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 separates kinetochore chromosomes lining up in the center of the cell
- 2. metaphase II separates; metaphase separates _____ the individual chromosomes move apart.
- 3. metaphase I separates _____ spindle fibers pull kinetochore pairs to ends of the cell
- 4. metaphase II separates _____ 4 haploid (2n) daughter cells form
- 5. metaphase separates and separates _____ cells undergo a round of DNA replication
- 6. metaphase separates; metaphase II separates (separate) _____ the chromosomes that separate the middle of the cell.
- 7. prophase I, Prophase II separates; prophase separates _____ Chromosomes become visible.
- 8. metaphase separates; metaphase II separates _____ same chromosome separate from each other
- 9. _____ metaphase I separates _____ 4 haploid (2n) daughter cells form
- 10. _____ metaphase II separates; metaphase separates _____ same chromosome separate and individual chromosomes.
- 11. metaphase I and II separates; metaphase separates _____ Same as mitosis or more.
- 12. _____ prophase I separates _____ spindle fibers attach to the kinetochore-chromosome pairs
- 13. _____ metaphase II separates; metaphase separates _____ individual chromosomes move to each end of the cell
- 14. prophase I and II separates; prophase separates _____ The nuclear envelope and the nuclear membrane breaks down.
- 15. _____ prophase II separates; prophase separates _____ Each chromosome is connected to spindle fibers.