

Answer Worksheet

On the lines provided, under the appropriate number of sections I (mitosis) and sections II, including cytokinesis in the proper section:

- 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, new chromosomes appear from each other
- 6. 4th metaphase II, 4 haploid (2n) daughter cells form
- 7. 2nd metaphase I, spindle fibers attach to the kinetochore-kinetochore pairs
- 8. 4th metaphase II, individual chromosomes move to each end of the cell
- 9. 2nd metaphase I, crossing-over (X) occurs

10. 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.

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

12. 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. This line can be done for you.

- 1. _____ metaphase I occurs: kinetochore chromosomes lining 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: new chromosomes appear from each other
- 9. _____ metaphase I occurs: 4 haploid (2n) daughter cells form
- 10. _____ metaphase II occurs; metaphase occurs: new chromosomes appear and individual chromosomes.
- 11. [metaphase I and II occurs; metaphase occurs: Nuclear envelope is broken.
- 12. _____ prophase I occurs: spindle fibers attach to the kinetochore-kinetochore 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 envelope breaks down.
- 15. _____ prophase II occurs; prophase occurs: Each chromosome is reconnected a spindle fiber.