

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. 1st metaphase I, spindle fibers pull kinetochore pairs to ends of the cell
- 3. 2nd 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. 1st prophase I, spindle fibers attach to the kinetochore-chromosome pairs
- 8. 4th metaphase II, individual chromosomes move to each end of the cell
- 9. 2nd prophase I, crossing-over (X) occurs

10. Compare the number and type of cells that result from mitosis vs. meiosis. Mitosis II 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 centrioles kinetochore chromosomes lining in the center of the cell
- 2 metaphase II centrioles; metaphase centrioles _____ the individual chromosomes move apart.
- 3 metaphase I centrioles spindle fibers pull kinetochore pairs to ends of the cell
- 4. _____ metaphase II centrioles 4 haploid (2n) daughter cells form
- 5. metaphase centrioles and centrioles cells undergo a round of DNA replication
- 6. metaphase centrioles metaphase II centrioles (no pairs) the chromosomes that separate the middle of the cell.
- 7. prophase I, Prophase II centrioles; prophase centrioles chromosomes become visible.
- 8. metaphase centrioles; metaphase II centrioles new chromosomes appear from each other
- 9. _____ metaphase I centrioles 4 haploid (2n) daughter cells form
- 10. _____ metaphase II centrioles; metaphase centrioles new chromosomes appear and individual chromosomes.
- 11. [metaphase I and II centrioles; metaphase centrioles] crossing-over occurs.
- 12. _____ prophase I centrioles spindle fibers attach to the kinetochore-chromosome pairs
- 13. _____ metaphase II centrioles; metaphase centrioles individual chromosomes move to each end of the cell
- 14. prophase I and II centrioles; prophase centrioles the centrioles disappear and the spindle fibers arrange to divide them.
- 15. _____ prophase II centrioles; prophase centrioles Each chromosome is recombined a spindle fiber.