

Skills Worksheet

Directed Reading

Section: Meiosis

Read each question, and write your answer in the space provided.

1. What is meiosis?

2. Explain the difference between meiosis I and meiosis II.

3. List the stages of meiosis in the order that they occur.

4. What is crossing-over?

5. What is independent assortment? During which phase(s) of meiosis does independent assortment occur and what is the significance of this process?

Directed Reading *continued*

In the space provided, write the name of the stage of meiosis that is being described.

- _____ 6. The centromeres divide, and the chromatids move to opposite poles of the cell.
- _____ 7. The homologous chromosomes separate. The chromosomes of each pair are pulled to opposite poles of the cell by the spindle fibers. The chromatids do not separate at their centromeres.
- _____ 8. The chromosomes condense, and the nuclear envelope breaks down. Homologous chromosomes pair all along their length and then crossing-over occurs.
- _____ 9. After one division of the nucleus, a new spindle forms around each group of chromosomes.
- _____ 10. Individual chromosomes line up along the equator, attached at their centromeres to spindle fibers.
- _____ 11. A nuclear envelope forms around each set of chromosomes. Two cells undergo cytokinesis, forming haploid offspring cells.
- _____ 12. Individual chromosomes gather at each of the two poles. In most organisms, the cytoplasm divides, forming two new cells.
- _____ 13. The pairs of homologous chromosomes are moved by the spindle to the equator of the cell. The homologous chromosomes, each made up of two chromatids, remain together.