

Name _____

Key

Date _____

Meiosis Practice Worksheet

Identifying Processes On the lines provided, **order** the different stages of meiosis I THROUGH meiosis II, including interphase in the proper sequence.

- 1. metaphase 1 homologous chromosome line up in the center of the cell
- 2. Anaphase 1 spindle fibers pull homologous pairs to ends of the cell
- 3. Telophase/cytokinesis 2 4 haploid (N) daughter cells form
- 4. Synthesis cells undergo a round of DNA replication
- 5. Anaphase 1 Homologous chromosomes separate from each other
- 6. telophase/cytokinesis 1 2 haploid (N) daughter cells form
- 7. metaphase 1 spindle fibers attach to the homologous chromosome pairs
- 8. Anaphase 2 individual chromatids move to each end of the cell
- 9. prophase 1 crossing-over (if any) occurs

Short Answer

10. Compare the number and type of cells that result from meiosis vs. mitosis.

4 haploid ← → 2 diploid

11. How do the genetic contents of cells resulting from mitosis and meiosis differ?

all chromosomes ← → 1/2 chromosomes

12. **Comparing and Contrasting:** describe a similarity and a difference between meiosis I and meiosis II.

Similarity: same phases

* multiply answers

Difference: Crossing over

may apply *

13. **Applying Concepts:** If a diploid cell containing 28 chromosomes undergoes meiosis, how many chromosomes will each daughter cell have?

14 each

14. Compare and Contrast: How are mitosis and meiosis similar and different?

* Multiple Answers may apply

Similarity: Cell Division

Difference: mito = genetically identical
meio = genetically different

Read each statement, and 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 first one is done for you

1. metaphase I (meiosis) homologous chromosome line up in the center of the cell

2. Anaphase 2 + Anaphase mitosis The individual chromosomes move apart.

3. Anaphase I spindle fibers pull homologous pairs to ends of the cell

4. telophase I + Cytokinesis I 4 haploid (N) daughter cells form

5. Interphase Meiosis/Mitosis cells undergo a round of DNA replication

6. Metaphase 2 / metaphase mitosis The chromosomes line up across the middle of the cell.

7. Prophase I / prophase mitosis Chromosomes become visible.

8. Anaphase I Homologous chromosomes separate from each other

9. telophase / cytokinesis mitosis / telophase / cyto I 2 haploid (N) daughter cells form

10. Anaphase 2 + Anaphase mitosis Sister chromatids break into individual chromosomes.

11. all telophases Nuclear envelope re-forms.

12. metaphase I Spindle fibers attach to the homologous chromosome pairs

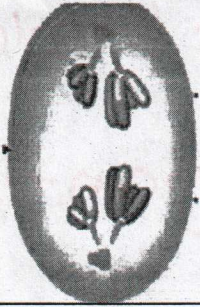
13. Anaphase 2 + mitosis Anaphase Individual chromatids move to each end of the cell

14. all prophases The nucleolus disappears and the nuclear envelope breaks down.

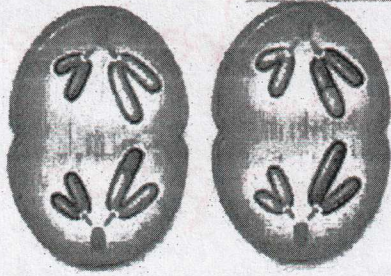
15. Anaphase 2 + mitosis Anaphase Each chromosome is connected to a spindle fiber.

16. prophase I Crossing-over (if any) occurs

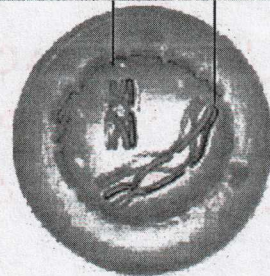
IDENTIFY THE PHASES OF MEIOSIS:



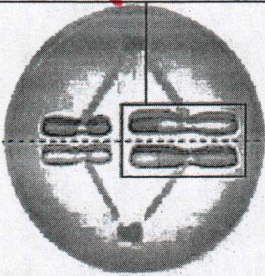
1. Anaphase I



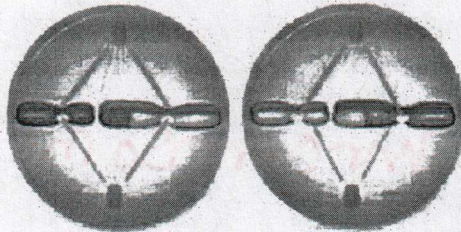
2. Anaphase 2



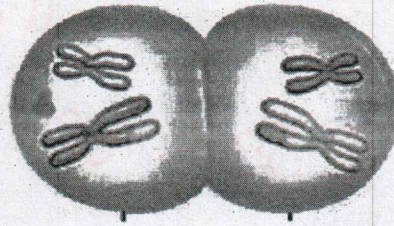
3. prophase I



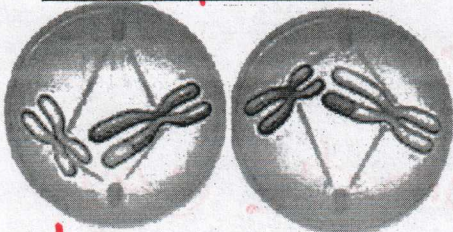
4. metaphase I



5. metaphase 2



6. prophase 2



~~7. telophase I~~
7. telophase/cyto 1



8. telophase / cyto 2

Define the following VOCABULARY:

1. Asexual reproduction

reproduction w/o combination of gametes

2. Centromere

where sister chromatids connect

3. Chromatid

1/2 of a sister chromatid

4. Chromatin

DNA wrapped around histones

5. Chromosomes

~~single~~ single strands of chromatin

6. **Crossing over**
DNA Swapped between Homologous chromosomes
7. **Cytokinesis**
Division of cytoplasm + organelles
8. **Diploid**
2 sets of chromosomes
9. **Gamete**
Sex cells
10. **Haploid**
1 set of chromosomes
11. **Karyotype**
Picture of organisms chromosomes
12. **Meiosis**
Process to create gametes
13. **Mitosis**
Process to create somatic cells
14. **Sexual reproduction**
Combining of gametes.