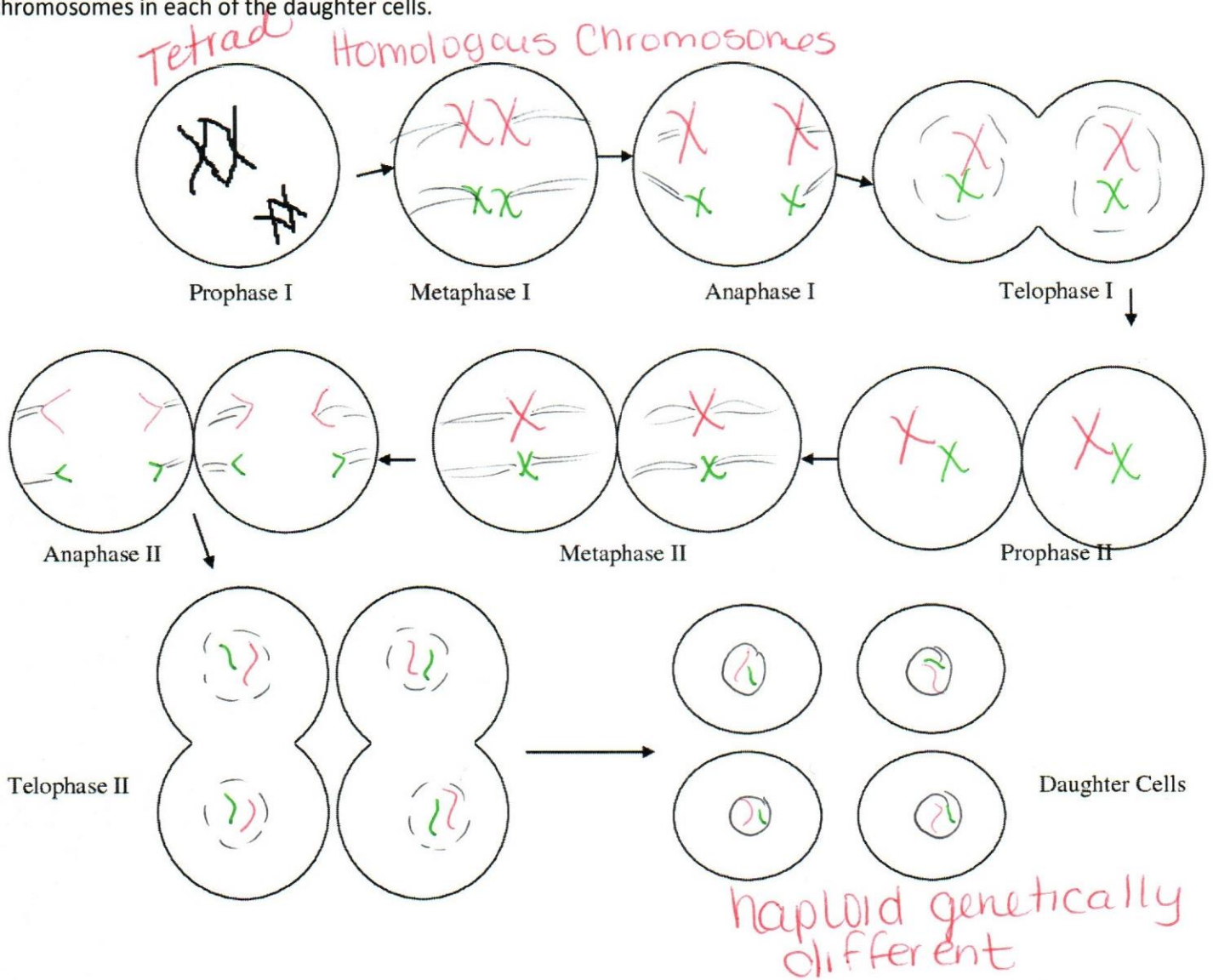


Part C: Modeling Meiosis

21. For the cells below, draw in the appropriate number of chromosomes in each cell for an organism with a diploid number of 4. Show what the stages of meiosis would look beginning with four chromosomes. You should end up with 2 chromosomes in each of the daughter cells.



Part D. Summary Questions

22. Why, if the parent cell begins with the diploid number of chromosomes, does meiosis need to go through 2 divisions?

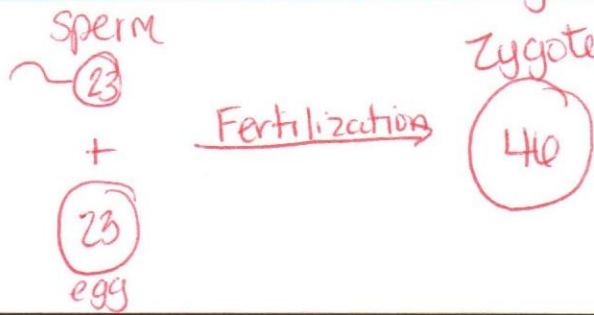
to decrease the chromosome number and divide the cells

23. What will the four daughter cells turn into in a male? 4 sperm

24. What will the four daughter cells turn into in a female? 1 egg + 3 polar bodies

25. Why do we want the gametes formed to have half of the correct number of chromosomes?

so during fertilization we move back to original diploid number





Name: Key Period: _____ Date: _____

MEIOSIS STUDY GUIDE

Part A: Vocabulary Matching

- | | |
|------------------------------|--|
| <u>e</u> 1. Chromatin | a. two identical chromosomes that have been replicated during interphase |
| <u>c</u> 2. Chromosome | b. central part holding two sister chromatids together |
| <u>a</u> 3. Sister Chromatid | c. the form of DNA found beginning in prophase; coiled and condensed |
| <u>b</u> 4. Centromere | d. organelle in animal cells that anchors the spindle to the poles of the cell |
| <u>d</u> 5. Centriole | e. the form of DNA found in interphase; uncoiled and disorganized |
-
- | | |
|----------------------------|--|
| <u>d</u> 6. Haploid | a. two homologous chromosomes that have paired up in prophase I of meiosis |
| <u>b</u> 7. Diploid | b. the full amount of chromosomes; 2 sets; 2N |
| <u>e</u> 8. Homologous | c. occurs in prophase I of meiosis; homologous chromosomes swap DNA |
| <u>a</u> 9. Tetrad | d. half of the full amount of chromosomes; 1 set; 1N |
| <u>c</u> 10. Crossing-Over | e. describes chromosomes that are similar in size and shape |
-
- | | |
|----------------------------|--|
| <u>c</u> 11. Gametes | a. another word for body cells (cells that are not reproductive) |
| <u>a</u> 12. Somatic Cells | b. the male gamete |
| <u>e</u> 13. Ova | c. another word for reproductive or sex cells; sperm and egg |
| <u>b</u> 14. Sperm | d. thread-like fibers that pull chromosomes apart in mitosis and meiosis |
| <u>d</u> 15. Spindle | e. another word for egg; the female gamete |

Part B. Multiple Choice

16. How many divisions does meiosis have?
a. 1 b. 2 c. 3 d. 4
17. Meiosis results in what kind of daughter cells?
a. somatic cells b. gametes c. sperm and egg d. both b and c
18. The daughter cells in meiosis are:
a. haploid b. diploid c. both d. neither
19. The daughter cells in meiosis are:
a. genetically identical to the parent cell b. genetically different from the parent cell
20. How many daughter cells are produced in meiosis?
a. 1 b. 2 c. 3 d. 4

