

Name:

Date: \_\_\_\_\_

Period:

## Honors Biology: Meiosis (8.12 – 8.15) Guided Reading

## How do cells reproduce?

2. Define the following terms:

- Somatic cell: any cell in a multicellular organism not a sperm or egg
- Homologous chromosomes: two chromosomes of a matched pair in a diploid cell... same genes
- Autosomes: chromosomes that do not determine sex
- Sex chromosomes: " " determine sex (gender)

- Diploid cell: a cell that contains two homologous sets of chromosomes ( $2n$ )
- Haploid cell: a cell that contains only a single set of chromosomes ( $n$ )
- Gamete: a haploid cell... sperm or egg
- Fertilization: the union of sperm and egg to produce a zygote
- Zygote: a fertilized egg (diploid) resulting from fertilization
- Meiosis: the division of a single diploid cell into 4 haploid daughter cells
- Tetrad: A paired set of homologous chromosomes
- Synapsis: the pairing of homologous chromosomes at the start of meiosis

3. The prefix *homo-* means “the same”. What is the same about homologous chromosomes?

Same length, same genes,  
same staining pattern

4. In humans...how many chromosomes are autosomes? ...how many are sex chromosomes?

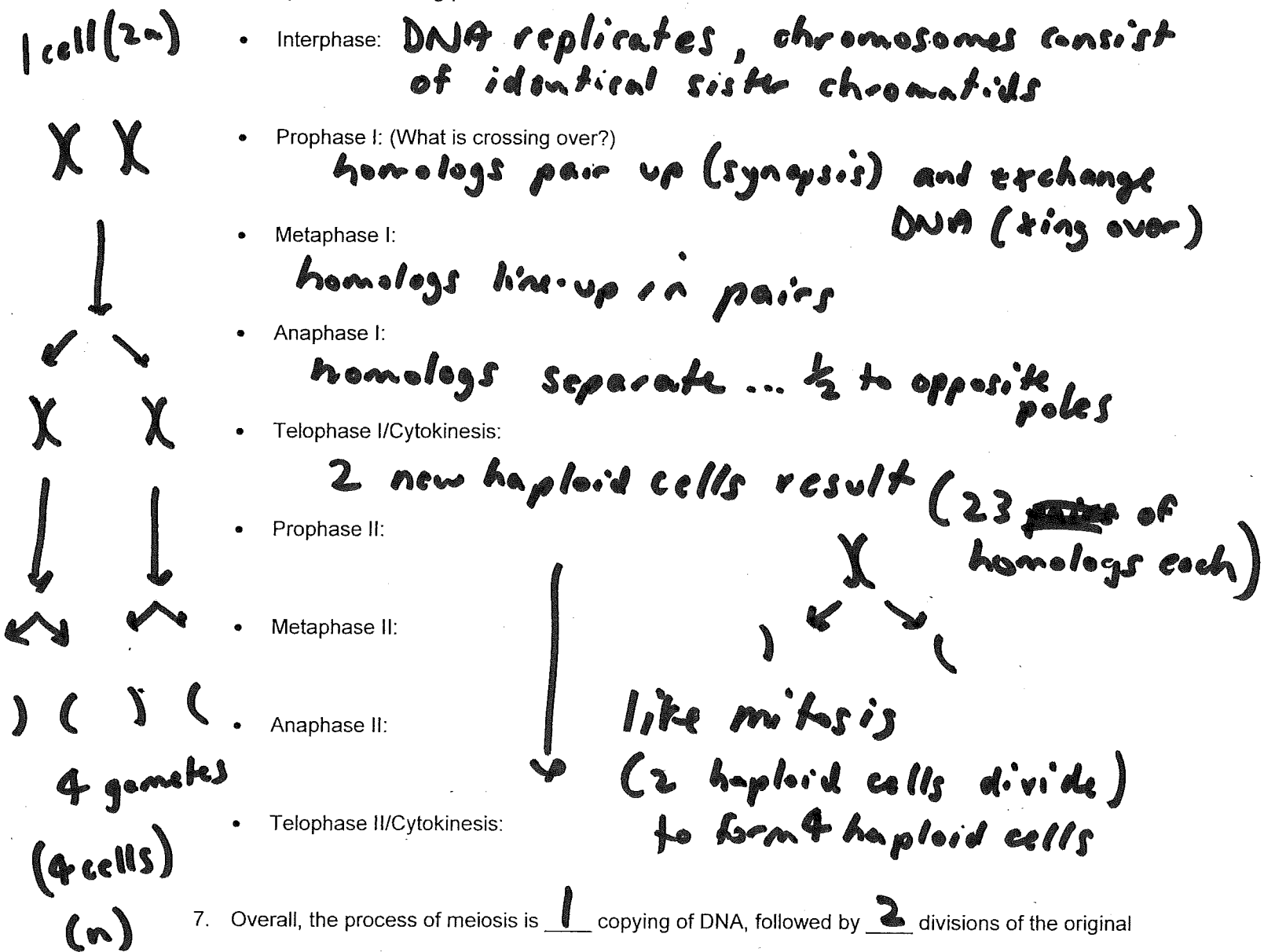
44 (22 pairs)

 $2$  (1 pair)

5. Using the terms: diploid, haploid, zygote, fertilization, and gametes... describe the human life cycle:

During fertilization, haploid gametes (sperm and egg) combine to form a diploid zygote.

6. Describe the following phases of meiosis:



7. Overall, the process of meiosis is 1 copying of DNA, followed by 2 divisions of the original cell. This results in 4 daughter cells that are genetically varied.

8. Meiosis II is essentially like mitosis, EXCEPT... cells are already haploid.