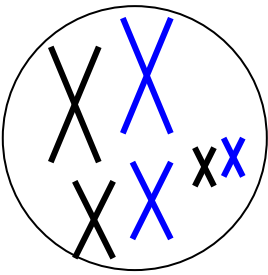
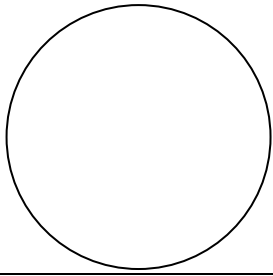
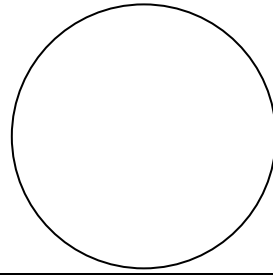
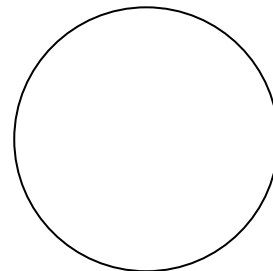


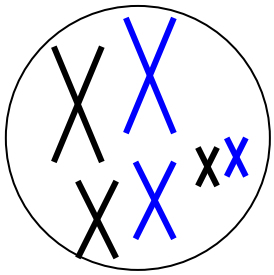
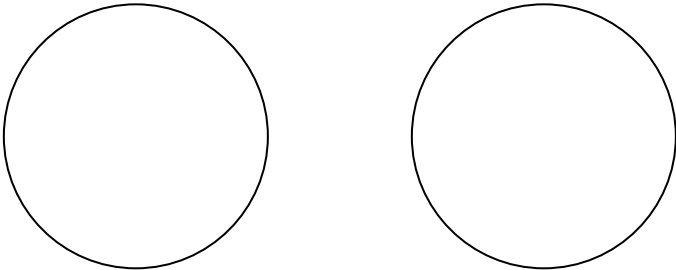
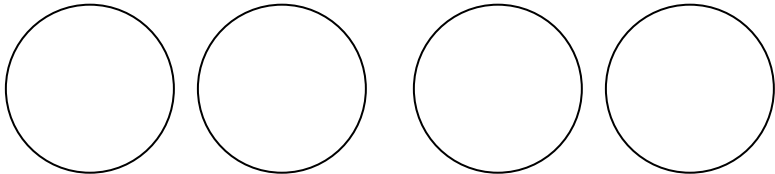
# Study Guide – Mitosis / Meiosis Unit Test

## Biology

- For the following diploid cell with three chromosome pairs, illustrate the indicated phases of **mitosis**. The size of the chromosome represents the chromosome number (the largest chromosome is #1; the second largest is #2; the smallest is #3) and the color indicates the parental origin (black is from mom, blue is from pop):

<b>Prophase:</b>	
<b>Metaphase:</b>	
<b>Anaphase:</b>	
<b>Telophase:</b>	

- For the following diploid cell with three chromosome pairs, illustrate the end products of stage 1 and stage 2 of **meiosis**. The size of the chromosome represents the chromosome number (the largest chromosome is #1; the second largest is #2; the smallest is #3) and the color indicates the parental origin (black is from mom, blue is from pop):

<b>Parent Cell:</b>	
<b>Stage 1:</b>	
<b>Stage 2:</b>	

3. For mitosis, when does DNA replication occur?
4. For meiosis, when does DNA replication occur?
5. How many daughter cells are produced at the end of a mitotic cell division? Where does the parent cell go?
6. How many daughter cells are produced during a meiotic cell division? Where does the parent cell go?
7. Describe the genetic relationship as either “identical” or “not identical” between:
  - a) The parent cell and the daughter cells of a mitotic cell division
  - b) The parent cell and the daughter cells of stage 1 during a meiotic cell division
  - c) The parent cell and the daughter cells of stage 2 during a meiotic cell division
  - d) The two daughter cells of stage 1 during a meiotic cell division
  - e) The four daughter cells of stage 2 during a meiotic cell division (compare all the cells to each other)
8. What is the main purpose of a mitotic cell division? How does it help an organism?
9. What is the main purpose of a meiotic cell division? In other words, what is the ultimate function of the cells that an organism produces during meiosis?

10. Be sure you can explain the following terms in your own words:

- a. Mitosis
- b. Meiosis
- c. Gamete
- d. Diploid
- e. Haploid
- f. Chromosome
- h. Sister chromatid
- i. Centromere
- j. Crossing over
- k. Tetrad
- l. Spindle