

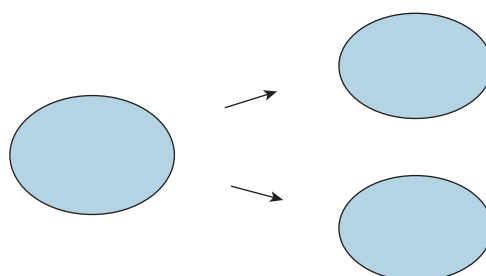
Name _____ Period _____

Chapter 8: The Cellular Basis of Reproduction and Inheritance

*Guided Reading Activities***Big Idea: Cell Division and Reproduction**

Answer the following questions as you read Modules 8.1–8.2:

1. This diagram represents one cell dividing to give rise to two new daughter cells. Each new daughter cell will be _____ to each other and the parent cell.



2. Complete the table that compares asexual and sexual reproduction.

	Asexual reproduction	Sexual reproduction
Requires egg and sperm?		
Requires one parent?		
Produces genetically identical offspring?		
Produces genetically different offspring?		

3. Cell division will accomplish which of the following functions in your body?
- Growth and development
 - Production of gametes
 - Cell replacement
 - All of the above are functions of cell division in your body

4. True or false: Binary fission is considered asexual reproduction. If false, make it a correct statement.

Big Idea: The Eukaryotic Cell Cycle and Mitosis

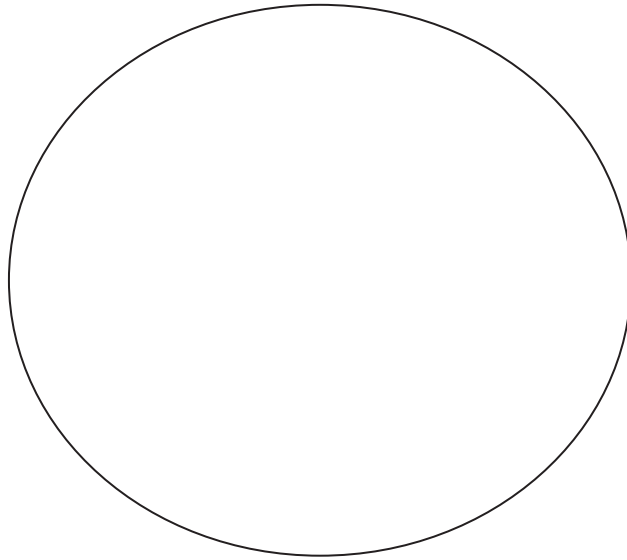
Answer the following questions as you read Modules 8.3–8.10:

1. True or false: When chromatin is in its diffuse form, you cannot see it with a light microscope. If false, make it a correct statement.
2. A common student misconception is about the relationship between chromatin and chromosomes. Briefly explain the relationship to a student who doesn't understand it.
3. Briefly explain why the chromosome in this diagram has been duplicated.



4. True or false: Certain cells in the adult human body do not undergo cell division. If false, make it a correct statement.
5. Match the following terms with the best description: interphase, s-phase, cytokinesis, mitosis, and mitotic phase.
 - a. Division of the cytoplasm: _____
 - b. DNA replication occurs: _____
 - c. The chromosomes divide: _____
 - d. The cell is performing normal functions: _____
 - e. Accounts for only 10% of the cell cycle: _____
6. Every person starts off life as a single cell called a zygote. An adult human consists of trillions of cells. Briefly explain why it's so important that the zygote undergo mitosis properly.

7. Place the following stages of mitosis in the correct order: metaphase, prometaphase, prophase, telophase, and anaphase.
8. Use the generic cell outline provided to sketch a cell with five chromosomes in metaphase. Your drawing should include the following labeled terms: metaphase plate, mitotic spindle, and spindle microtubules.



9. A drug is known to freeze microtubules in place after they have fully formed. Which stage of cell division would most likely be affected? What critical process would be inhibited?
10. A shallow groove in the cell known as a(n) indicates that cytokinesis has begun.
11. A drug is known to inhibit the formation of the cell plate during cytokinesis. Would this drug affect human cells? Briefly explain your answer.
12. True or false: Cells that exhibit anchorage dependence divide only if they are in contact with a solid surface. If false, make it a correct statement.
13. Growth factors are necessary at certain times for proper growth and development. Can growth factors ever have an unintended negative effect? If so, briefly explain your answer.