

Name: \_\_\_\_\_

## Chapter 10-1, 10-2 Reading Guide

### 10-1 Cell Growth

1. Larger cells will divide because they have trouble doing what?  
\_\_\_\_\_

2. Where is DNA found (eukaryotes)?  
\_\_\_\_\_

3. As a cell gets larger, what kind of crisis might occur (related to DNA)?  
\_\_\_\_\_

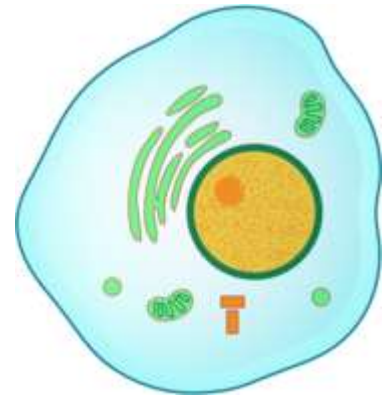
4. How does food, water and oxygen enter the cell? \_\_\_\_\_

5. Understanding the relationship between a cell's volume and \_\_\_\_\_ is the key to understanding why cells divide as they grow.

6. As a cell grows, the volume increases [ more / less ] rapidly than the surface area.

7. Cell division is the process by which a cell divides into two  
\_\_\_\_\_.

8. What must happen before cell division can occur?  
\_\_\_\_\_



### 10-2 Cell Division

9. What are the two phases of cell division?  
\_\_\_\_\_

10. The cells produced by mitosis are [ identical to / different from ] the parent cell.

11. How many chromosomes does a human cell have? \_\_\_\_\_ What about a fruit fly? \_\_\_\_\_

12. Each chromosome consists of two identical parts called  
\_\_\_\_\_

13. Each pair of chromosomes is attached at the \_\_\_\_\_

14. The "in-between" period of cell growth is called \_\_\_\_\_

15. The series of events that cells go through as they grow and divide is called the  
\_\_\_\_\_

16. Interphase is divided into what three smaller phases? \_\_\_\_\_ (abbreviate)

17. During which phase is DNA replicated? \_\_\_\_\_

### MITOSIS

18. What are the four phases of mitosis?  
\_\_\_\_\_

19. What is the longest phase of mitosis? \_\_\_\_\_

20. Tiny structures located in the nucleus that separate and go to opposite sides are called  
\_\_\_\_\_

21. What structure helps to separate chromosomes during mitosis? \_\_\_\_\_

22. What happens during metaphase?  
\_\_\_\_\_

23. During what phase do the sister chromatids separate?

24. In telophase, the chromosomes begin to disperse into a tangle of

\_\_\_\_\_ and the \_\_\_\_\_ reforms.

### CYTOKINESIS

25. Cytokinesis usually occurs at the same time as \_\_\_\_\_

26. In order for cytokinesis to occur in plants, a cell \_\_\_\_\_ forms between the two new cells.

### INTERPRETING GRAPHICS (see Figure 10-5)

27. In which phase do you first see the spindle? \_\_\_\_\_

28. What phase occurs directly after metaphase? \_\_\_\_\_

29. In which phase do the chromosomes move apart? \_\_\_\_\_

30. In which phases are the chromosomes NOT visible (two phases) \_\_\_\_\_

### TESTING YOURSELF

1. The rate at which materials enter and leave through the cell membrane depends on the cell's?

a. volume b. mass c. weight d. surface area

2. Sister chromatids are attached to each other at an area called the:

a. centromere b. centriole c. spindle d. chromosome

3. The process of cell division results in: a. sister chromatids b. two daughter cells c. mitosis d. cell growth

4. If a cell has 12 chromosomes, how many chromosomes will be in each of its daughter cells after mitosis?

a. 4 b. 6 c. 12 d. 24

5. DNA copies itself during which phase? a. prophase b. metaphase c. cytokinesis d. interphase