

Review II: The Cell Cycle: Mitosis & Cytokinesis

1. Fill in the following blanks:

a. The purpose of mitosis is _____

b. Mitosis occurs in _____ phases.

c. Name the phases of mitosis in order:

Phase 1: _____

Phase 2: _____

Phase 3: _____

Phase 4: _____

2. Complete the following Table on 'The Cell Cycle':

Stage	What is happening.		What it looks like.
Interphase			
Cytokinesis	Animal	Plant	

3. Fill in the following spaces:

a. The cell theory states that all cells come from : _____

b. Mitosis always occurs _____ (before, after, during, instead of), cytokinesis.

c. Which of the following structure is not involved in mitosis: ribosomes, spindle fibres, centrioles.

d. _____ two replicas of a chromosome, are held together at the _____.

e. As _____ occurs, the entire cell divides into two new, genetically identical, daughter cells.

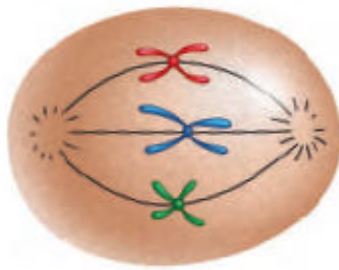
f. Each cell division produces two genetically identical cells called _____ cells.

4. For unicellular organisms, mitosis and cell divisions aid in: (a) growth, (b) replacement of body parts, (c) reproduction, (d) maintenance, (e) all of the above.

For questions 5 –11 below: Match the descriptions of cell activity on the left with the term on the right. Write the correct letter on the line provided.

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|--|----------------|
| 5. _____ chromosomes move towards poles | A. Interphase |
| 6. _____ DNA replicates | B. Prophase |
| 7. _____ chromosomes align on equator | C. metaphase |
| 8. _____ nucleolus re-appears inside each nucleus | D. Anaphase |
| 9. _____ centrioles move toward opposite ends of nucleus | E. Telophase |
| 10. _____ period of cell growth | F. cytokinesis |
| 11. _____ cell division | |

12. In the diagram below, describe which phase of the mitosis cycle is occurring and explain what is happening.



13. Which stage or phase of the cell cycle corresponds to a new nuclear membrane forming around each group of daughter chromosomes?
 A. prophase B. metaphase C. anaphase D. telophase
14. Which stage or phase of the cell cycle corresponds to the chromosomes lining up in the middle of the cell?
 A. prophase B. metaphase C. anaphase D. telophase
15. Which stage or phase of the cell cycle corresponds to the nuclear membrane of the cell dissolving?
 A. prophase B. metaphase C. anaphase D. telophase
16. What structures ensure that each of the sister chromatids become part of a different daughter cell?
17. What structures ensure that each of the sister chromatids becomes part of a different daughter cell?
18. Which cells of the human body do you think undergo mitosis more frequently than other cells? Why?
19. If there are 10 chromosomes in a particular cell at the start of prophase, how many will be present in the same cell at the end of anaphase, before cytokinesis has begun? How many will there be after cytokinesis has occurred?
20. What is the purpose of the cell cycle?