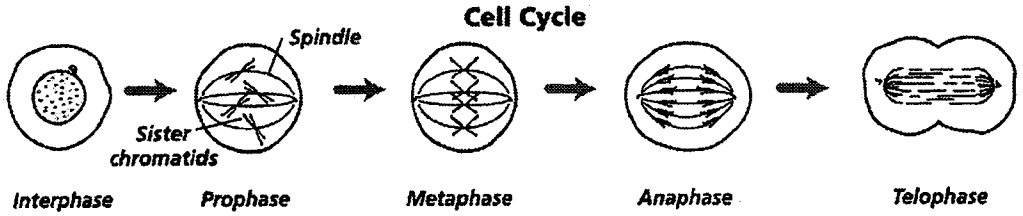
Standard: B-2.6 Name: _____

Mitosis Worksheet & Diagram Identification



1. Chromosomes move to the middle of the spindle during what phase? METAPHASE

2. What are sister chromatids? When do the separate? _____
Duplicated Chromosomes ANAPHASE

3. During which phase do chromsomes first become visible? PROPHASE

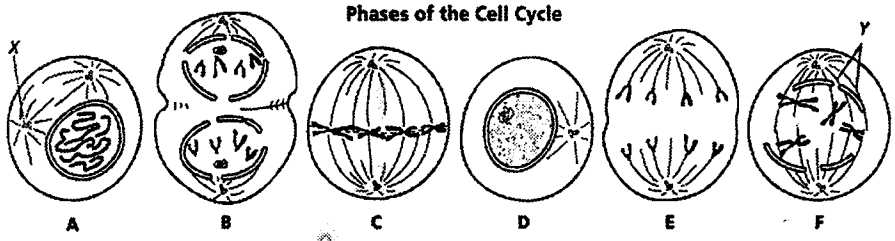
4. In mucIticellular organisms, the cell cycle produces groups of cells that perform the same function. What are these groups of cells called? TISSUES

Complete the table by checking the correct column for each statement.

Statement	Interphase	Mitosis
5. Cell growth occurs	✓	
6. Nuclear division occurs		✓
7. Chromosomes are distributed equally to daughter cells.		✓
8. Protein production is high	✓	
9. Chromosomes are duplicated	✓	
10. DNA synthesis occurs	✓	
11. Cytoplasm divides immediately after this period		✓
12. Mitochondria and other organelles are made.	✓	

Standard: B-2.6 Name: _____

The following are not in the correct order. Please answer the questions below.



13. Which cell is in metaphase? C

14. Cells A and F show an early and late stage of the same phase of mitosis. What phase is it? PROPHASE

15. In cell A, what is the structure labeled X? CENTRIOLE / CENTROSOME

16. In cell F, what is the structure labeled Y? SPINDLE FIBERS

17. Which cell is not in a phase of mitosis? D

18. What two main changes are taking place in cell B? Cleavage furrow / Nucleus returns DNA uncoils

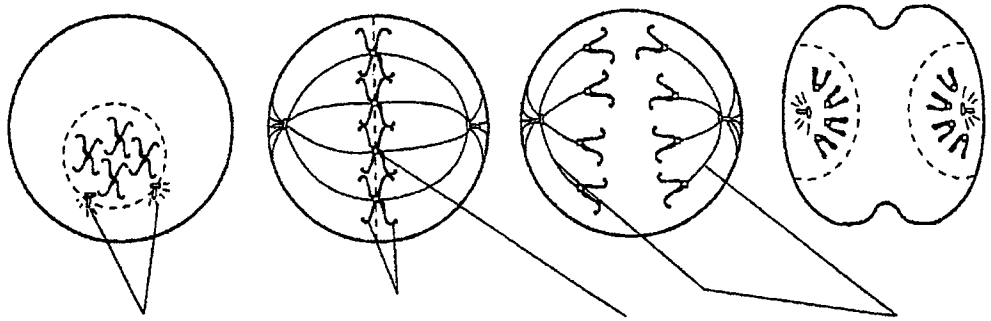
19. Sequence the six diagrams in order from first to last. D – A – F – C – E – B

20. What is the end product of mitosis? 2 daughter cells

21. What is the main difference between cytokinesis in plants and animals? _____
Cell plate Cleavage furrow

Identify the following phases of mitosis. Use these choices: telophase, metaphase, anaphase, prophase. Then label the diagrams. Use these choices: sister chromatids, centromere, spindle fibers, centrioles.

22. PROPHASE 23. METAPHASE 24. ANAPHASE 25. TELOPHASE



26. Centriole in Centrosome 27. Sister Chromatids 28. Centromere 29. Microtubule Spindle Fibers

HB Chapter 8: Mitosis Study Guide

Name _____

Directions: After reviewing the mitotic cell cycle, your notes and internet activities, fill in the blank with the phase that matches the statement.

Interphase (G_1, S and G_2)
Prophase
Metaphase
Anaphase
Telophase

1. TELO cytokinesis occurs
2. PRO nuclear membrane disappears
3. ANA centromere breaks and chromos 'walk' to the poles
4. TELO chromos uncoil; become long and thin
5. INTER – "S" DNA replicates
6. META chromatids lie on either side of the 'equator'
7. PRO spindle fibers and aster rays form
8. TELO cleavage (cell) furrow develops
9. PRO centrosomes send out spindle fibers
10. TELO nuclear membrane and nucleolus reform
11. PRO chromos coil up; become short and thick
12. TELO cell plate forms
13. ANA cell contains two sets (or double the amount) of DNA – moving to poles
14. TELO spindle fibers and aster disappear
15. INTER – G_1/G_2 cell is growing
16. PRO nucleolus disappears
17. INTER – S chromatids are formed
18. INTER phase that takes the majority of the time in the cell cycle
19. INTER & TELO (two answers) cell contains DNA as chromatin (aka long and thin)
20. TELO CYTOKINESIS cytoplasm divides the parent cell into two daughter cells

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