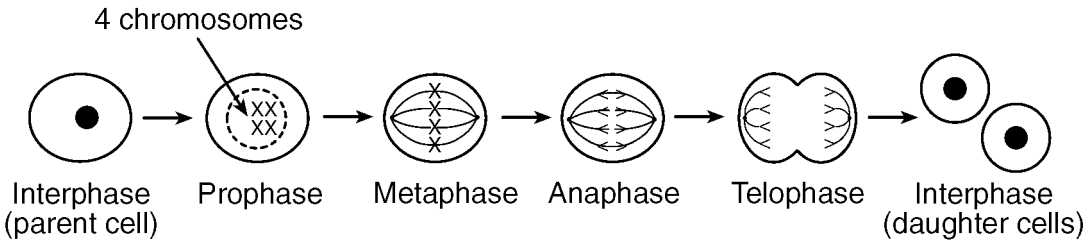
Cell Division Review

Ms. Oshan

1. The diagram below illustrates the process of cell division.

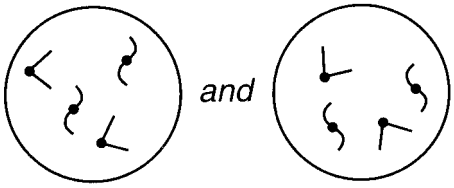


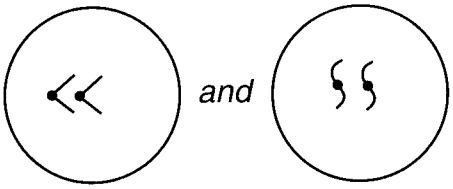
What is the significance of anaphase in this process?

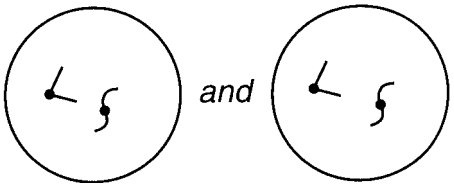
1) Anaphase usually ensures that each daughter cell has the same number of chromosomes as the parent cell.
2) Anaphase usually ensures that each daughter cell has twice as many chromosomes as the parent cell.
3) In anaphase, the cell splits in half.
4) In anaphase, the DNA is being replicated.

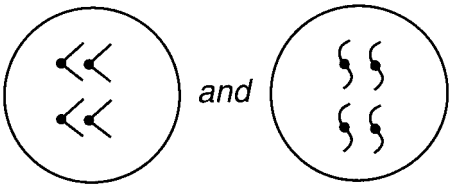
2. The chromosome content of a skin cell that is about to form two new skin cells is represented in the diagram below.

Which diagram best represents the chromosomes that would be found in the two new skin cells produced as a result of this process?

1) 

2) 

3) 

4) 

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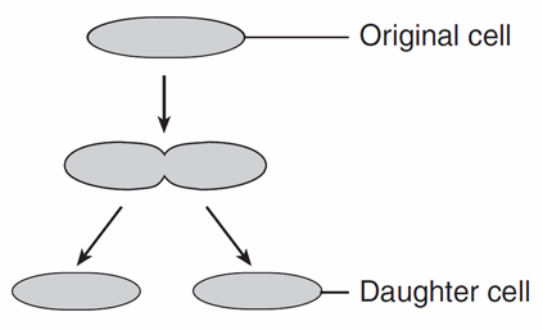
3. The diagram below represents division of a cell that produces two daughter cells.



Which statement most likely describes the daughter cells produced?

1) The daughter cells will pass on only half of the genetic information they received from the original cell.
2) The daughter cells will each produce offspring that will have the same genetic information as the original cell.
3) The daughter cells will each undergo the same mutations as the original cell after reproduction has occurred.
4) The daughter cells will not pass on any of the genes that they received from the original cell.

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4. Which two processes are involved in mitotic cell division?

1) nuclear duplication and cytoplasmic division
2) nuclear duplication and cytoplasmic duplication
3) spermatogenesis and cytoplasmic duplication
4) oogenesis and cytoplasmic division

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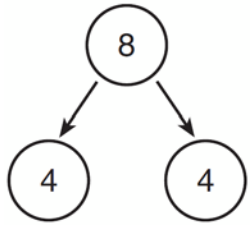
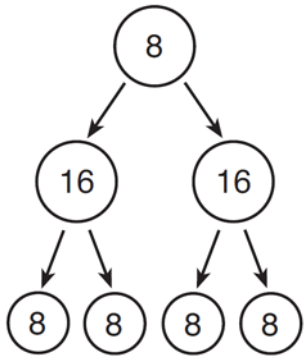
5. The number in each circle below represents the chromosome number of the cell. Which diagram represents the production of offspring by an asexually reproducing organism

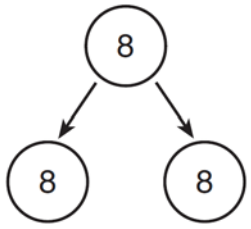
1)



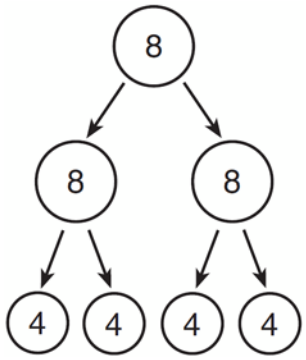
2)



3)



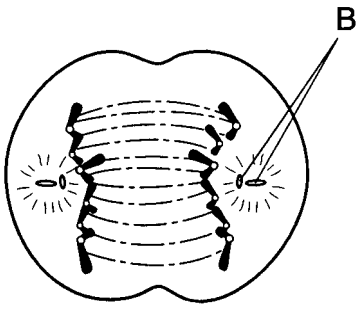
4)



6. Which cellular process involves DNA replication?

1) mitosis
2) cyclosis
3) pinocytosis
4) protein synthesis

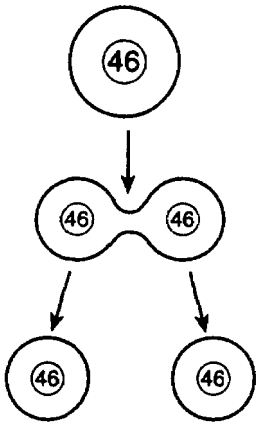
7. The cell in the diagram below illustrates a stage of mitotic cell division.



Letter *B* indicates the

1) paired chromosomes
2) centrioles
3) cell plate
4) endoplasmic reticulum

8. The diagram below can be used to illustrate a process directly involved in



1) tissue repair
2) meiosis
3) recombination
4) sexual reproduction

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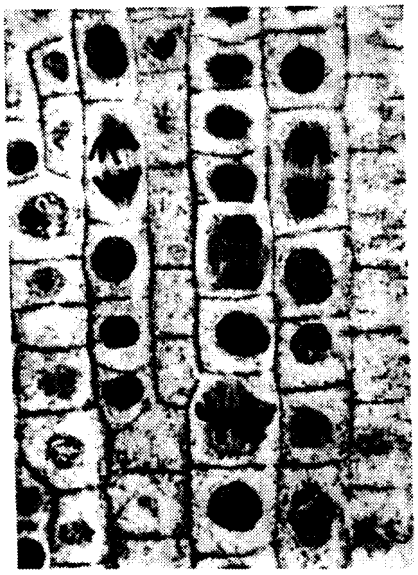
9. Each root cell of a giant redwood tree contains 22 chromosomes. Two new cells that each contain 11 pairs of chromosomes are produced when one of these cells undergoes cell division involving the process of

1) oogenesis
2) meiosis
3) mitosis
4) synapsis

10. A photomicrograph of cells involved in various stages of nuclear division is shown below.



Which title is most appropriate for this photomicrograph?

1) Mitosis in an Onion Root Tip
2) Cell Division in Human Blood Cells
3) Meiosis in Male Gametes
4) Gametogenesis in Yeast Cells

11. What would most likely result if mitosis was *not* accompanied by cytoplasmic division?

1) two cells, each with one nucleus
2) two cells, each without a nucleus
3) one cell with two identical nuclei
4) one cell without a nucleus

12. The phrases below describe several events that occur during the process of mitosis.

(A) attachment of double-stranded chromosomes to the spindle apparatus
(B) formation of single-stranded chromosomes, which are moved to opposite ends of the cell
(C) disintegration of the nuclear membrane
(D) nuclear membrane formation around each set of chromosomes, forming two nuclei
(E) synthesis of a spindle apparatus

Which sequence represents the correct order of these events?

1) $A \rightarrow B \rightarrow C \rightarrow D \rightarrow E$
2) $B \rightarrow D \rightarrow A \rightarrow C \rightarrow E$
3) $A \rightarrow D \rightarrow E \rightarrow B \rightarrow C$
4) $C \rightarrow E \rightarrow A \rightarrow B \rightarrow D$

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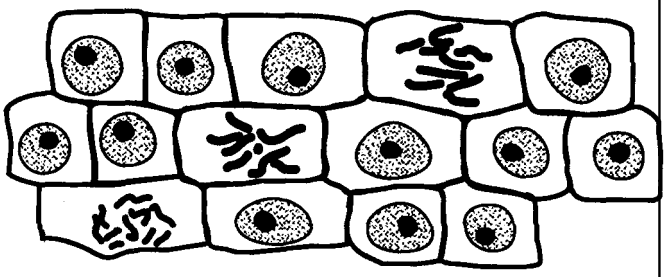
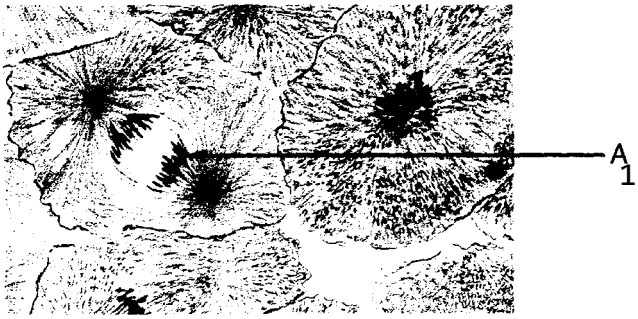
13. The diagram below shows some cells in the meristematic region of a root tip.



Which statement about these cells is correct?

1) About 20 percent of the cells are dividing.
2) About 80 percent of the cells are dividing.
3) Most of the cells are undergoing meiosis.
4) Most of the cells will never undergo mitosis.

14. Cells of a whitefish embryo were viewed under high power of a compound microscope and a photograph was taken as shown below.

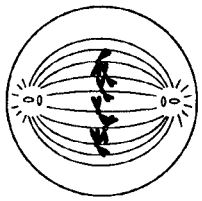


Which structures are indicated by *A*?

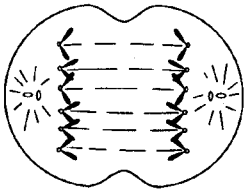
1) ribosomes
2) centrioles
3) centrosomes
4) chromosomes

15. Which diagram below represents a plant cell close to the final stage of mitotic cell division?

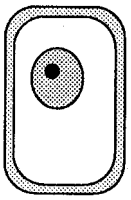
1)



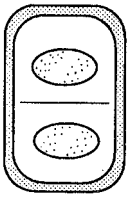
2)



3)



4)



16. A cell in the stem tip of a corn plant contains 20 chromosomes. After this cell divides, how many chromosomes should each resulting daughter cell contain?

1) 10
2) 20
3) 30
4) 40

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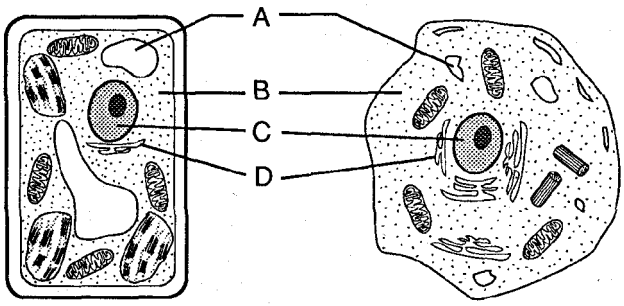
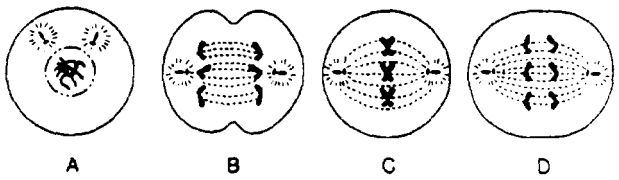
17. In the diagram below, which letter indicates the cell part in which the changes involved in mitosis first become evident?



1) *A*
2) *B*
3) *C*
4) *D*

18. The chromosome number in an egg cell nucleus of a plant is 14. The normal chromosome number in a root epidermal cell of the same plant is
1) 7
2) 14
3) 21
4) 28

19. Which is the correct sequence for the stages of mitotic cell division represented by the diagrams below?



1) *A* → *B* → *C* → *D*
2) *A* → *C* → *D* → *B*
3) *B* → *A* → *D* → *C*
4) *B* → *C* → *D* → *A*

20. The following list describes some of the events associated with normal cell division.

A–Nuclear membrane formation around each set of newly formed chromosomes

B–Separation of centromeres

C–Replication of each chromosome

D–Movement of single-stranded chromosomes- to opposite ends of the spindle

What is the normal sequence in which these events occur?
1) *A* → *B* → *C* → *D*
2) *C* → *B* → *D* → *A*
3) *C* → *D* → *B* → *A*
4) *D* → *C* → *A* → *B*

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Answer Key
[New Exam]

1. 1
2. 1
3. 2
4. 1
5. 3
6. 1
7. 2
8. 1
9. 3
10. 1
11. 3
12. 4
13. 1
14. 4
15. 4
16. 2
17. 3
18. 4
19. 2
20. 2