Quiz 2 - Chromosomes, Mitosis and Meiosis

Due Jan 22 at 11:59pm **Points** 11 **Questions** 11
Available Jan 9 at 9am - Jan 23 at 2am **Time Limit** 60 Minutes
Allowed Attempts 2

Instructions

This quiz asks questions about mitosis and meiosis. The relevant textbook chapter is chapter 12 (12.2 specifically) and chapter 13 (13.1 and 13.2 specifically). You have two attempts at this quiz. The highest marks counts. You have 60 minutes to complete each quiz.

This quiz is due on Sunday, January 22nd @ 11:59 pm.

The answers will be visible starting on Monday, January 23 @ noon

Attempt History

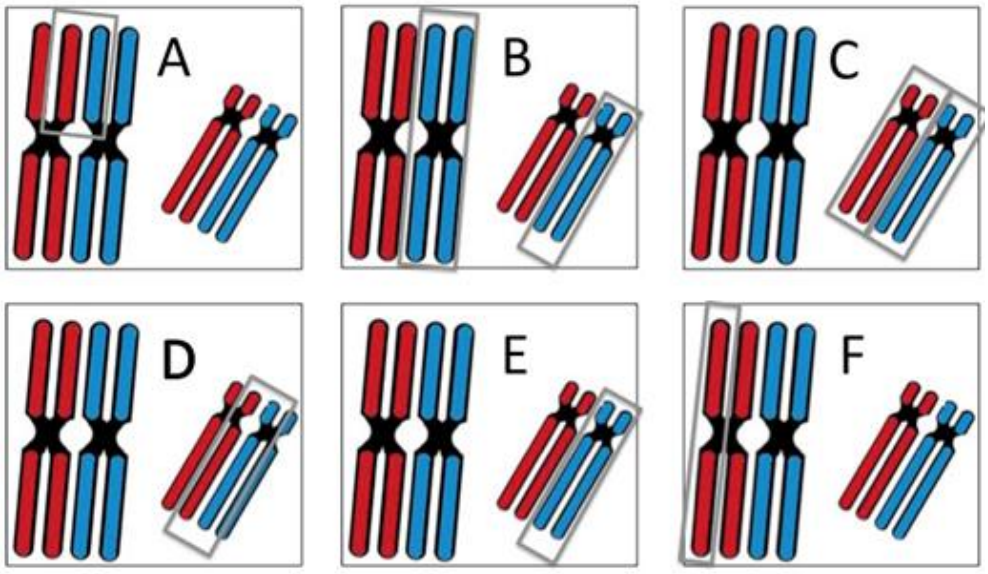
	Attempt	Time	Score
KEPT	Attempt 2	6 minutes	11 out of 11
LATEST	Attempt 2	6 minutes	11 out of 11
	Attempt 1	34 minutes	10 out of 11

ⓘ Correct answers will be available Jan 23 at 12pm - Feb 7 at 9am.

Score for this attempt: **11** out of 11
Submitted Jan 21 at 11:24am
This attempt took 6 minutes.

Question 1 — 1 / 1 pts

Which circled portion(s) of the diagrams represent **homologous chromosomes**?



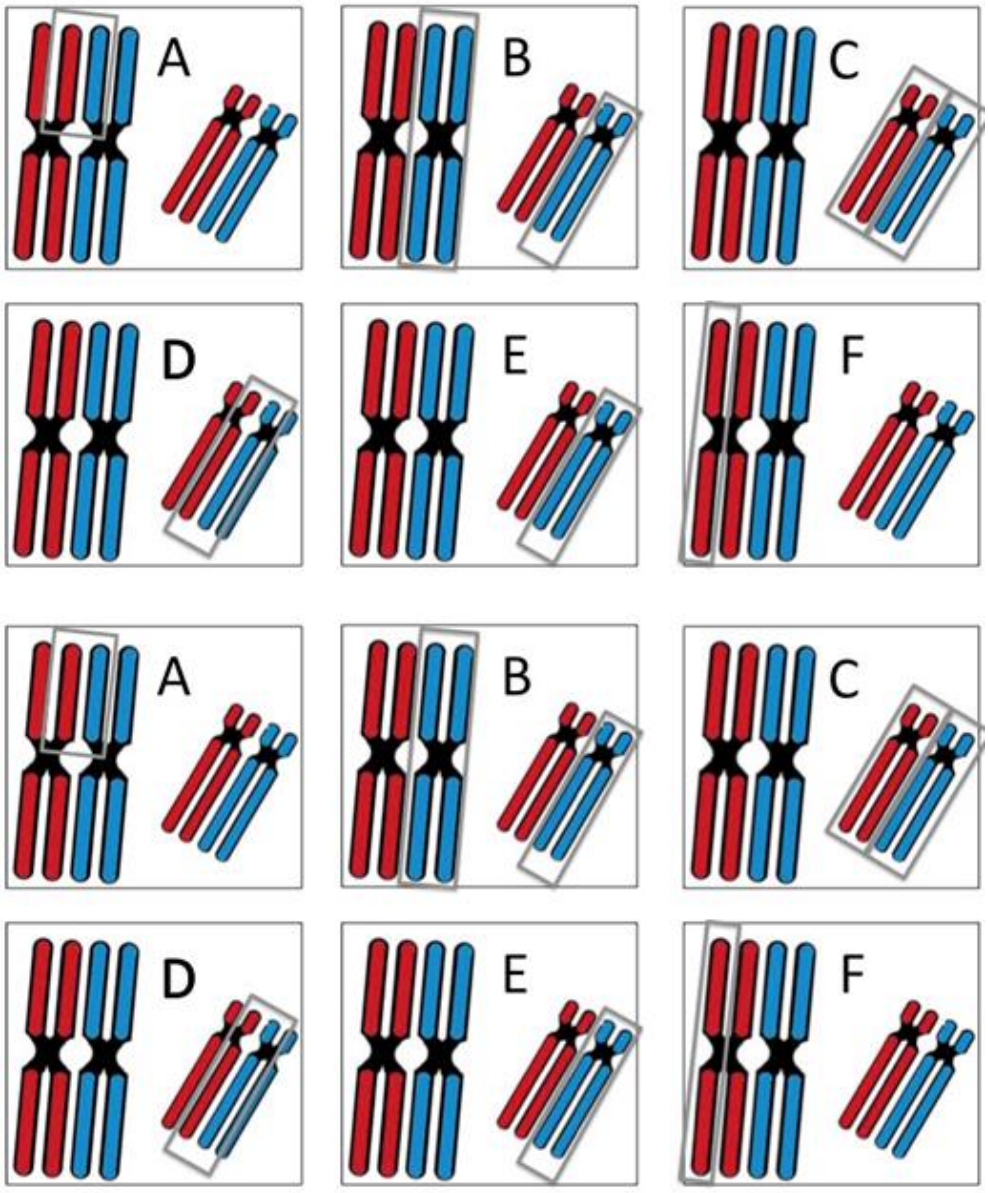
- (●) C
- ( ) D
- ( ) B
- ( ) F
- ( ) A
- ( ) E

Correct. The chromosomes shown in C represent homologous chromosomes, i.e. chromosomes of the same type with the same genes.

Question 2

1 / 1 pts

Which circled portion(s) of the diagrams represent **non-sister chromatids**?



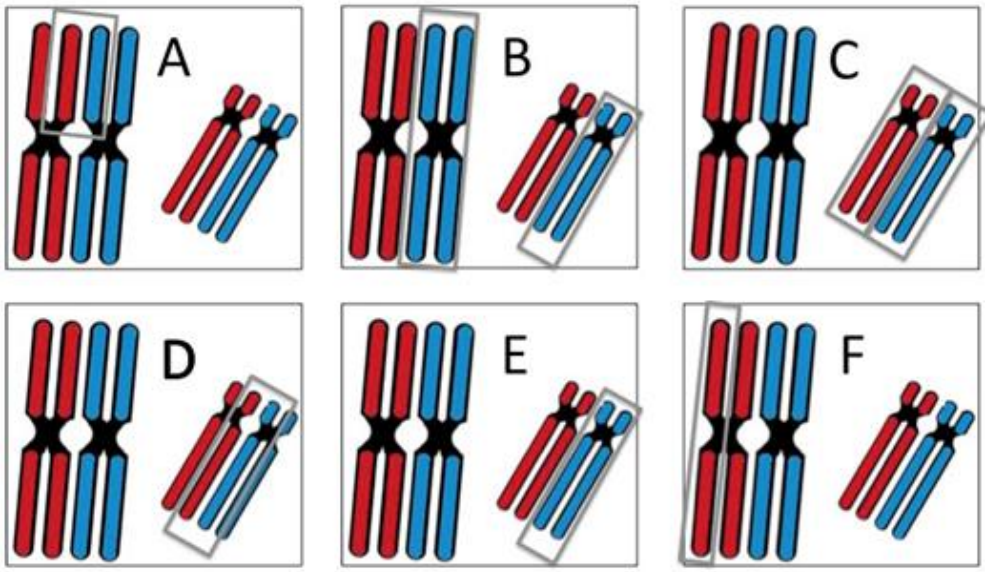
- F
- D
- C
- B
- E
- A

Correct. The circled region in D contains non-sister chromatids.

Question 3

1 / 1 pts

Which circled portion(s) of the diagrams represent **sister chromatids**?



- F
- D
- E
- C
- B
- A

Correct. The circled region in E contains a chromosome composed of two chromatids.

Question 4

1 / 1 pts

A diploid (2N) cell undergoes a mitotic nuclear division followed by cytokinesis. This results in:

- two genetically distinct diploid cells
- four genetically identical diploid cells
- two genetically identical diploid cells
- four genetically identical haploid cells
- four genetically distinct diploid cells
- four genetically distinct haploid cells

A mitotic nuclear division produces two nuclei identical to the original nucleus. During cytokinesis the nuclei are partitioned into separate cells. The result is two genetically identical cells (ignoring mutation) with the same number of chromosomes as the parent cell.

Question 5

1 / 1 pts

If the cell shown in the figure below undergoes mitosis, it would result in:

- Four genetically distinct cells each having four chromosomes.
- Four genetically identical cells each having four chromosomes.
- None of the above, it is not possible for this cell to undergo mitosis.
- Four genetically identical cells each having two chromosomes.
- Four genetically distinct cells each having two chromosomes.
- **Two genetically identical cells each having four chromosomes.**
- Four genetically distinct cells each having four chromosomes.

A mitotic nuclear division produces two nuclei identical to the original nucleus. During cytokinesis the nuclei are partitioned into separate cells. The result is two identical cells with the same number of chromosomes as the parent cell.

Question 6

1 / 1 pts

A diploid (2N) cell from an individual that is heterozygous for alleles at many genetic loci undergoes meiosis followed by cytokinesis. This

results in:

- four genetically identical diploid cells
- four genetically distinct haploid cells
- two genetically identical diploid cells
- four genetically identical haploid cells
- two genetically distinct diploid cells
- four genetically distinct diploid cells

Meiosis and cytokinesis result in four haploid cells. If the individual is not completely homozygous for all loci, the daughter cells will be genetically distinct (i.e. each will have a unique combination of alleles).

Question 7

1 / 1 pts

A diploid cell 2N=12 undergoes meiosis. How many chromosomes are present in each of the resulting cells?

- 12
- 48
- 24
- 3
- 6

Meiosis produces four cells with half the number of chromosomes of the original cell.

Question 8

1 / 1 pts

If the cell shown in the figure below undergoes meiosis, it would result in:

- (●) Four genetically distinct cells each having three chromosomes.
- ( ) Four genetically distinct cells each having six chromosomes.
- ( ) Two genetically identical cells each having three chromosomes.
- ( ) Four genetically distinct cells each having six chromosomes.
- ( ) Four genetically identical cells each having three chromosomes.
- ( ) Four genetically identical cells each having six chromosomes.
- ( ) None of the above, it is not possible for this cell to undergo meiosis.

The cell in the figure is diploid with a haploid number of three. Meiosis and cytokinesis result in four haploid cells (with three chromosomes each). If the individual is not completely homozygous for all loci, the daughter cells will be genetically distinct (i.e. each will have a unique combination of alleles).

Question 9

1 / 1 pts

If the cell shown in the figure below undergoes meiosis, how many chromosomes would be present in each of the resulting cells?

- 8
- 32
- None of the above, it is not possible for this cell to undergo meiosis.
- **4**
- 16
- 2

Meiosis produces four cells with half the number of chromosomes of the original cell.

Question 10

1 / 1 pts

The cell in the figure undergoes a meiotic nuclear division followed by cytokinesis. This results in:

- (●) Four genetically distinct cells each having four chromosomes.
- ( ) Two genetically identical cells each having four chromosomes.
- ( ) Four genetically identical cells each having four chromosomes.
- ( ) Four genetically distinct cells each having eight chromosomes.
- ( ) Four genetically distinct cells each having eight chromosomes.
- ( ) Four genetically identical cells each having eight chromosomes.
- ( )

None of the above, it is not possible for this cell to undergo meiosis.

A meiotic nuclear division produces two four nuclei that are genetically different (provided that the original cell is not homozygous for all loci).

Question 11

1 / 1 pts

Chromosomes and their homologs align at the equator of the cell during which stage of meiosis?

- prophase II.
- prophase I.
- metaphase I.
- metaphase II.

Quiz Score: **11** out of 11