



Mitosis and Meiosis

Comprehension Questions

1. The Cell Cycle is a series of events that occur during four main stages. The first stage is called GAP 1 or G1. What are the other three stages? Draw a simple diagram to show the order of these four stages:

G1 \longrightarrow \longrightarrow \longrightarrow \longrightarrow

2. Use the words from the following list to correctly answer the questions about Cell

- | | | | |
|--------------|---------------------|---------|---------------|
| • Synthesis | • DNA replication | • Gap 1 | • Cytokinesis |
| • Interphase | • Protein synthesis | • Gap 2 | • Checkpoint |
| • Mitosis | • Restriction point | | |

- a) The cell nucleus divides during _____.
- b) The phase with the longest period of growth is _____.
- c) _____ occurs during the Gap 1 phase.
- d) The phases that make up the Interphase stage are _____, _____, and _____.
- e) The cell enters the Synthesis phase once _____ is reached.
- f) During Synthesis, _____ takes place.
- g) Between the Gap 2 and mitosis phases, the cell moves through a _____.
- h) Following mitosis, the cell divides during _____.

Complete the following multiple choice questions about mitosis:

3. Which of the following is not true of mitosis:

Mitosis is a vital part of the growth and repair of living tissue.

Mitosis is a type of cell division, which results in two daughter cells genetically identical to the parent.

Mitosis involves the replication of DNA, the genetic material in the chromosomes.

Cytokinesis is not a stage of mitosis.

4. What is the correct order of these mitosis phases:

anaphase, telophase, metaphase, prophase

telophase, prophase, metaphase, anaphase

prophase, metaphase, anaphase, telophase

prophase, anaphase, telophase, metaphase

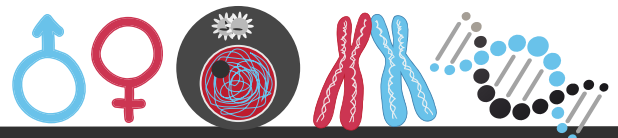
5. Chromosomes align in the centre of the cell during which phase?

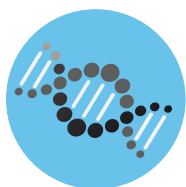
anaphase

telophase

prophase

metaphase





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6. Select which of the following statements are correct during prophase:

- There are two chromatids for each chromosome.
- A mitotic spindle forms.
- The centromeres move to opposite ends of the cell.
- The nuclear membrane dissolves.

7. The sister chromatids separate and move to opposite ends of the cell during:

anaphase telophase prophase metaphase

8. During which mitosis phase does the nuclear envelope form?

anaphase telophase prophase metaphase

9. Complete the following about meiosis:

Meiosis is a type of cell division producing _____, or sex cells, with _____ as many chromosomes as other cells. Human sex cells have _____ chromosomes. Through meiosis, one cell becomes _____ daughter cells. During the first cell division, meiosis one, crossing over results in an exchange of _____ material. This recombination of genes generates genetic _____. Meiosis two is similar to _____. Haploid sex cells exist in the human reproductive system, in the _____ of males and _____ of females.

