

Video: Mitosis & Meiosis

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Part I Mitosis

1. New cells must be constantly produced to replace _____, _____ and _____ cells.
2. Mitosis is defined as "the _____ and _____ of the _____ of a cell and its _____ during cell reproduction."
3. Interphase is defined as "the period of a cell's life cycle between one _____ and the next _____; the period of _____."
4. Cancer can be thought of as cells that never _____, that _____ over and over again, never remaining very long in _____.
5. Scientists refer to this process of DNA duplication as _____ because exact replicas of the DNA are produced.
6. Prophase can be defined as "the stage of mitosis when the _____ first appear and the nuclear membrane and nucleolus _____ from view."
7. The state, where double chromosomes are present, is called the _____ condition of a cell.
8. On looking even more closely, we see that each chromosome actually consists of two parts called sister _____ that contain the duplicated DNA.
9. The sister chromatids are held together at a specific region called the _____.
10. In animal cells, a structure called a _____ or centrosome divides into two daughter centrioles that migrate to opposite ends of the cell.
11. Between the centrioles, a delicate arrangement of microtubules, called the _____, is formed.
12. Metaphase, the second stage of mitosis, is defined as "the stage of mitosis when all the chromosomes are lined up along the center or _____ of the cell."
13. Anaphase is defined as "the stage of mitosis when the sister chromatids _____ and move toward opposite poles of the cell."
14. Telophase is defined as "the stage of mitosis when the new daughter chromosomes change back into the threads of chromatin and new _____ begin to form."
15. Cytokinesis is defined simply as "the division of the _____ during mitosis."

Video Quiz Part 1

16. The state of mitosis seen here is called _____.
17. Chromatin shortens and thickens to form these distinct structures called _____.
18. DNA is replicated during the stage between cell divisions called _____.
19. True or False: The division of the cytoplasm following mitosis is called cytokinesis.
20. The first stage of mitosis, the stage when the nuclear membrane begins to be reabsorbed into the cell, is called _____.

Part 2 Meiosis

21. In the case of human beings, the diploid body cells all have _____ chromosomes, whereas the sex cells, the sperm and egg, have only _____ chromosomes.
22. This condition where paired chromosomes are absent is called the _____ condition of a cell.
23. This pairing of homologous chromosomes during the first prophase of meiosis is defined as _____.
24. This process, called _____, is defined as the exchange of chromosomal material during synapsis and occurs only during the first _____ of meiosis.
25. During the next stage of meiosis called _____, the centromeres of the homologous chromosomes line up on the equator of the cell.
26. During the third stage of meiosis called _____, the homologous chromosomes, each made up of two sister chromatids, move apart, centromeres intact, one toward each mitotic center.
27. During the fourth stage of meiosis called _____, each new cell contains just one of each homologous chromosome, and each of these chromosomes still consists of two "sister" chromatids.
28. The fifth stage of meiosis, called _____, follows right on the heels of telophase one without an interphase stage in between them, as happens in mitosis.
29. Meiosis is very important. It enables all organisms that reproduce _____, that is require both male and female parents, to do so without continually multiplying the amount of _____ in the nucleus.

Video Instructional Quiz, Part 2

30. As a result of meiosis, sex cells are formed that have _____ the number of chromosomes of body cells.
31. True or False: Pairs of identical chromosomes are also called homologous chromosomes.
32. True or False: Normal body cells are diploid because they possess one of each different chromosome.
33. True or False: During meiosis, the DNA is replicated twice.
34. True or False: In plant and animal cells, meiosis occurs only in germ cells.