

MITOSIS: THE MAIN EVENT NOTES

Cell Division Notes

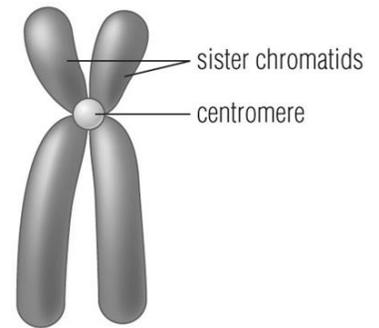
Name: _____ Date: _____ Block: _____

Cell Division:

1. Every cell must do what before cell division begins?
2. What are the **two main stages** of cell division? _____ & _____
3. What is **mitosis**?
4. What is **cytokinesis**?

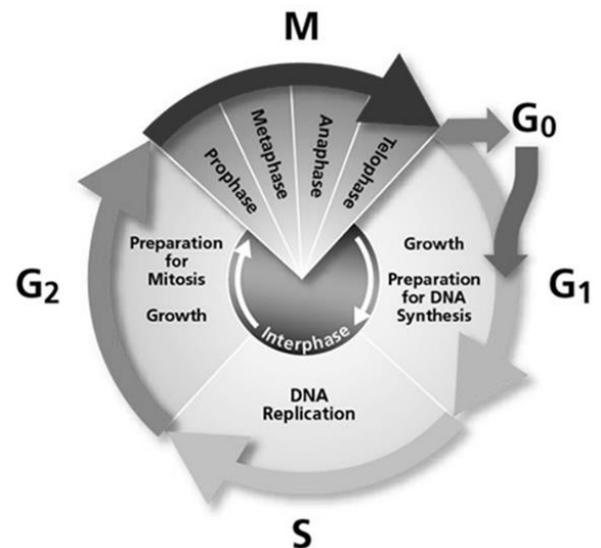
Chromosomes:

5. Before cell division, each chromosome is **replicated**, and because of this, each chromosome consists of **two identical** what?
6. How is genetic information passed on from one generation of a cell to the next?
7. When are chromosomes visible in the cell?



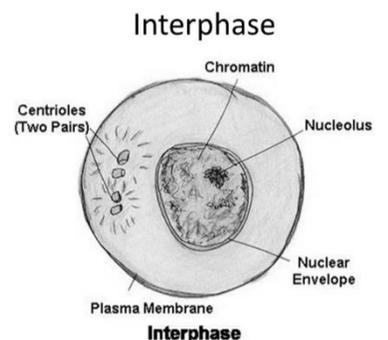
The Cell Cycle:

8. What is the series of events the cell goes through as they **grow and divide**?
9. During cell division, what does the cell divide to form?
10. The cell cycle takes place in **four phases**. What phase does cytokinesis and mitosis take place?
11. Chromosomes replicate or synthesis takes place during what phase?



Interphase & Checkpoints:

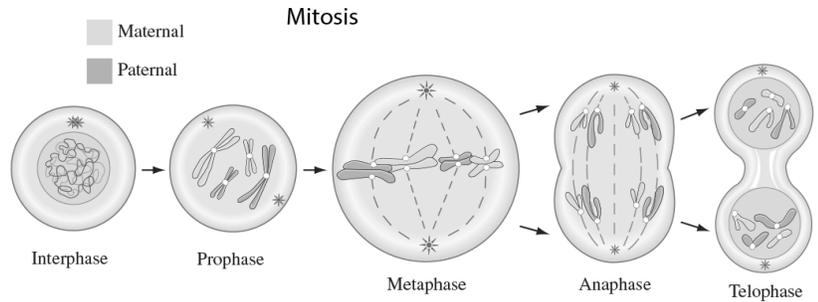
12. _____ is described as the **"in between"** period of cell growth.



13. Is this the phase that the cell spends most of its time in? _____

14. Interphase is divided into **three stages**: What is the first stage in which the cell increases in size, makes new proteins and organelles?

15. In this stage, chromosomes are replicated and the synthesis (making) of DNA molecules take place. **[if the cell replicates correctly here, it will finish the cycle].**

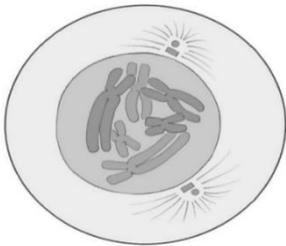


16. This stage is typically the shortest and many organelles and molecules are produced here. The cell is now preparing for the mitotic stages after this phase.

The M Phases:

17. Mitosis, which is the division of the nucleus is divided into **4 phases**, what are they?

- _____
- _____
- _____
- _____



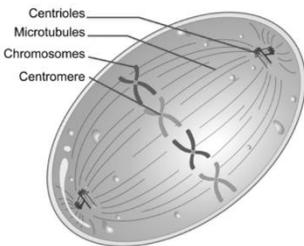
Prophase:

18. This is the first and _____ of the 4 mitotic phases (M). Here, the chromatin condenses and become what?

19. The **nuclear envelope** dissolves and _____ separate and take up position on either side of the nucleus.

20. What do the **centrioles** do during cell division?

21. These are **fan-like microtubules** that attach to and separate the chromosomes. _____

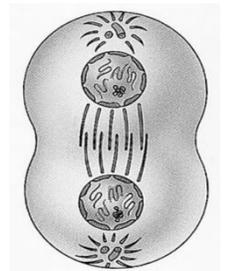


Metaphase:

22. This is the second and _____ stage of mitosis.

23. In this phase, chromosomes do what?

24. Each chromosome is connected to a **spindle fiber** at its what?

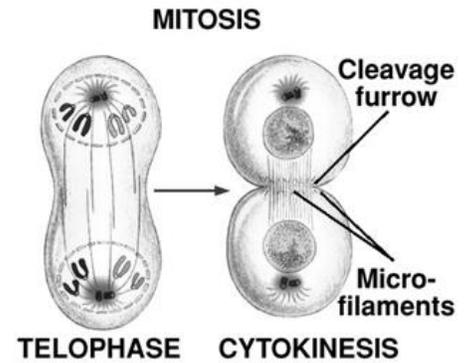


Anaphase:

25. This is the third stage of mitosis, centromeres that join what, split allowing the chromatids to separate.
26. The chromosomes are pulled a part until what happens?

Telophase:

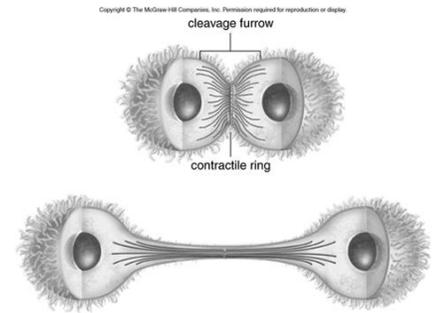
27. This is the fourth and final stage of mitosis, here the chromosomes do what?



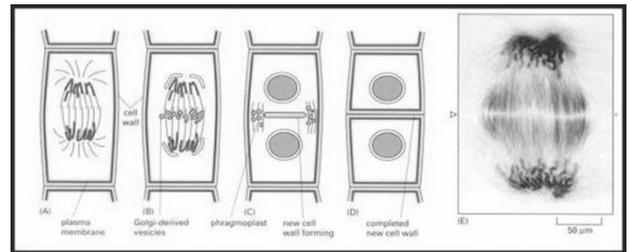
28. Two _____ around each set of _____

Cytokinesis:

29. After mitosis, how many nuclei are formed within the cytoplasm of a cell? _____
30. What is left to do after the completion of the **Mitotic phases**?

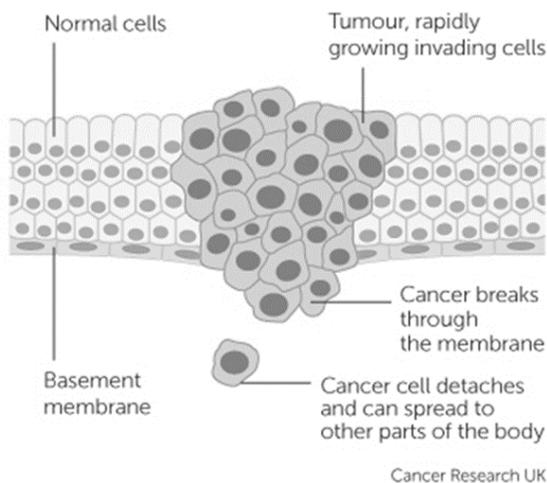


31. In this type of cell, cell membranes are drawn inward until the cytoplasm is pinched into equal parts, each containing their own nuclei and organelles.
32. In **PLANT** cells, the structure known as a _____ forms midway between divided nuclei.



Cell Cycle Regulators:

33. Not all cells move through the cell cycle at the same rate. _____ Regulate the timing of the cell cycle in eukaryotic cells.
34. These allow the cell cycle to proceed only when certain process have happened inside of the cell.



35. These direct cells to speed up or slow down of the cell cycle.
36. What is the **disorder** in which some of the body's own cells lose the ability to control cell growth?
37. A lot of cancer cells have a defect in this particular gene, which normally halts the cell cycle until all chromosomes have replicated properly in the **G2 phase**.