**Mitosis and the Cell Cycle**

**Order the stages of the Cell Cycle:**

**­\_\_\_\_\_\_\_** Mitosis

­­­\_\_\_\_\_\_\_ Interphase

\_\_\_\_\_\_\_ Cytokinesis

**Order the phases of Mitosis:**

­\_\_\_\_\_\_ Anaphase

\_\_\_\_\_\_ Metaphase

\_\_\_\_\_\_ Telophase

\_\_\_\_\_\_ Prophase

**Match the following word with the correct statement:**

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | Metaphase |  | This structure attaches to the centromeres and pulls the chromosomes apart. |
| 2 | Cytokinesis |  | Chromosomes are pulled apart to opposite poles of the cell in this phase. |
| 3 | Chromosome |  | Codes for genes; can be described as a double helix. |
| 4 | Spindle Fibres |  | Cell splits and forms two new cells. |
| 5 | Telophase |  | Nuclear membrane begins to reform; chromosomes begin to decondense. |
| 6 | Interphase |  | Chromosomes line up along the middle of the middle of the cell. |
| 7 | DNA  |  | This organelle contains the DNA. |
| 8 | Prophase |  | Nuclear membrane begins to disappear; chromosomes begin to condense. |
| 9 | Gene |  | Chromatin condenses to form this structure. |
| 10 | Anaphase | 9 | Small sections of DNA which code for individual traits. |
| 11 | Nucleus |  | Cell spends most of its life in this phase. |

**Label the stage/phase the diagrams below are in**:

  

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**List three reasons cell division is important in your body:**

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**Write the name of the stage of the cell cycle that corresponds to each event.**

-Cell is growing and carrying out its regular life functions. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

-Spindle fibres pull apart the chromosomes to different ends of the cell. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

-Cell is divided into two identical cells. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

-Chromosomes become visible under a microscope. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

-Nuclear membrane reforms around each new mass of chromosomes. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

-Chromosomes line up along the centre of the cell. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

-Chromosomes are duplicated. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

-Nuclear membrane begins to disappear. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Interphase is the longest phase of the cell cycle. Just before interphase ends, the DNA is duplicated. Explain why it is important for this to happen before the cell goes into Mitosis.

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Describe the end products of mitosis (i.e. how many cells result and how they compare genetically to the parent cell and to each other).

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