Honors Biology Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
NDHS Per: \_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_

**Cellular Division Study Questions**

1. What are the purposes of cell division?
2. Explain the genetic content of a human somatic cell. How does this differ from the genetic content of a human gamete?
3. Draw and explain the structure of a chromosome that is ready to undergo mitosis.
4. What happens in the different stages of interphase?
5. Explain the roles of each of the following in cell division.

Mitotic spindle

Centrosome

Aster

Kinetochore

1. What are the differences between cytokinesis in plant and animal cells? Include drawings.

7. Summarize the following phases of karyokinesis.

|  |  |
| --- | --- |
| **Prophase** |  |
| **Metaphase** |  |
| **Anaphase** |  |
| **Telophase** |  |

8. Explain the following three stages of meiosis. Indicate how each phase differs from mitosis.

|  |  |  |
| --- | --- | --- |
| **Phase** | **Description** | **Differences from Mitosis** |
| Prophase I |  |  |
| Metaphase I |  |  |
| Anaphase I |  |  |

9. Explain what happens in the process of crossing over.

10. How does meiosis result in greater genetic diversity?