Mitosis vs. Meiosis Review

|  |  |  |
| --- | --- | --- |
|  | Mitosis | Meiosis |
| Type of cells where process occurs |  |  |
| Are the daughter cells haploid or diploid? |  |  |
| Compare the number of chromosomes in the new daughter cell to the original cell |  |  |
| In humans – how many chromosomes in daughter cells? |  |  |
| How many cells are made in the end? |  |  |
| Genetically identical or not? |  |  |
| Purpose/Function/Importance |  |  |
| How many times does a cell divide? |  |  |

List some examples of body cells:

List some examples of sex cells:

When a sperm and egg cell meet, what do they form?

What is the scientific name of the process when a sperm cell and egg cell meet?

*Circle One*

**True or False:** Cancer cells go through mitosis uncontrollably.

Draw homologous chromosomes and label the sister chromatids.

Draw and describe what the centrioles and spindles do in a cell:

What happens in each stage?

|  |  |  |  |
| --- | --- | --- | --- |
| **Stage** | **Mitosis** | **Stage** | **Meiosis** |
| Interphase |  | Interphase |  |
| Prophase I |  |
| Prophase |  |
| Metaphase I |  |
| Anaphase I |  |
| Metaphase |  |
| Telophase I |  |
| Cytokinesis I |  |
| Anaphase |  |
| Prophase II |  |
| Metaphase II |  |
| Telophase |  |
| Anaphase II |  |
| Telophase II |  |
| Cytokinesis |  |
| Cytokinesis II |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Number of Chromosomes in Original Cell | Process | Number of Daughter Cells | Number of Chromosomes inside Daughter Cells | Are the Daughter Cells Haploid or Diploid |
| Diploid, 66 | Meiosis |  |  |  |
| Diploid, 66 | Mitosis |  |  |  |
| Diploid, 18 | Meiosis |  |  |  |
| Diploid, 18 | Mitosis |  |  |  |
| Diploid, 20 | Meiosis |  |  |  |
| Diploid, 20 | Mitosis |  |  |  |
| Diploid, 4 | Meiosis |  |  |  |
| Diploid, 4 | Mitosis |  |  |  |

A body cell of a mouse has 40 chromosomes:

* What is the cell’s diploid chromosome number?
* What is the cell’s haploid chromosome number?
* How many chromosomes does the muscle cell have?
* How many chromosomes does the egg cell have?

A sex cell of a frog has 18 chromosomes:

* What is the cell’s diploid chromosome number?
* What is the cell’s haploid chromosome number?
* How many chromosomes does the eye cell have?
* How many chromosomes does the sperm cell have?

Circle the answer:

* What types of cells are diploid? ***Body Cells or Sex Cells***
* What types of cells are haploid? ***Body Cells or Sex Cells***
* What process makes haploid cells? ***Mitosis or Meiosis***
* What process makes diploid cells?***Mitosis or Meiosis***

For each of the following, state if the cell is haploid or diploid:

* Sperm Cell
* Liver Cell
* Hair Cell
* Nail Cell
* Egg Cell
* Stomach Cell