**Cell Division - Meiosis** Name

Period Date

***Instructions:***

* Draw phase of meiosis in the appropriate box
* Find the appropriate description from the list given and copy it in the description box.

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| --- | --- | --- |
| Meiosis – Sex Cells | | |
| **Meiosis I** -Phase | Diagram | Description |
| Interphase  (not considered a phase) |  |  |
| Prophase I |  |  |
| Metaphase I |  |  |
| Anaphase I |  |  |
| Telophase I |  |  |
| Cytokinesis |  |  |
| **Meiosis II** – The **2 cells** from meiosis I, enter a second meiotic division (no interphase) | | |
| Prophase II |  |  |
| Metaphase II |  |  |
| Anaphase II |  |  |
| Telophase II |  |  |
| Cytokinesis |  |  |

**Comparison Table**

|  |  |  |
| --- | --- | --- |
|  | **Mitosis** | **Meiosis** |
| **What type of cell does it produce** |  |  |
| **Type of Reproduction**  **(asexual or sexual)** |  |  |
| **Cells are Genetically**  **(different or identical)** |  |  |
| **Number of Divisions** |  |  |
| **Number of Daughter Cells produced** |  |  |
| **Chromosome number is (reduced by half or the same as parent cell)** |  |  |

**Directions:** Use the description below to complete your meiosis table

**Meiosis I**

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| The chromosomes move to opposite ends of the cell and two new nuclear envelopes will form. |
| Centrioles separate and move toward poles.  Each chromosome pairs with its homologous chromosome and crosses over to exchange alleles to produce new combinations of alleles (genetic diversity)  Homologous chromosomes are a set of one maternal chromosome (from mom) and one paternal chromosome (from dad) that pair up with each other. |
| The cytoplasm pinches and he cell separates into two cells different than the parent cell  Diploid cells contain two complete sets (2n) of chromosomes (humans 2x23 = 46). |
| Cell grow and DNA replication  Cells undergo a round of DNA replication forming duplicate copy. Chromosomes are in thread like form called chromatin (# chromosomes doubles from 46 to 92) |
| Fibers pull homologous chromosomes apart and move towards opposite ends of the cell |
| Chromosomes line up in homologous pairs in the middle different from mitosis |

**Meiosis II**

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| The sister chromatids separate from the spindle and move toward opposite ends of the cell |
| Cytoplasm is pinched into 2 cells, each haploid (1n) – totaling 4 cells (tetrad) produced from the original one parent cell.  A haploid cell contains only one complete set of chromosomes (humans – 23). |
| Centrioles appear and move to opposite ends.  (half the number of chromosomes than Prophase I) |
| Two nuclear envelopes form in each of the two cells |
| Chromosomes line up in the middle in a single file line |