Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Homework Assignment #2 - Mitosis and Meiosis (5 pts)**

**1. Fill in the blanks in the sentences below.**

Mitosis takes place in \_\_\_\_\_\_\_\_\_\_\_\_ cells, which go through a single cell division to produce to two genetically \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ daughter cells. Cells that undergo mitosis are \_\_\_\_\_\_\_\_\_\_\_\_\_, which means they have two complete sets of chromosomes. Meiosis takes place in \_\_\_\_\_\_\_\_\_\_\_\_ or sex cells, which go through two cell divisions and result in four genetically \_\_\_\_\_\_\_\_\_\_\_\_\_\_ daughter cells. Sex cells are \_\_\_\_\_\_\_\_\_\_\_\_, which means they only have a single set of chromosomes.

What are the two sources of genetic variation in meiosis and when do they occur? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**For each phase of Mitosis shown below, draw and label the components of the cell (nucleus, chromosomes, spindle fibers, centrosomes), write the name of the phase below the cell, and briefly describe what is happening in the cell during each phase.**

**Interphase**

DNA replication, cell **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

growth, chromosomes **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** form.**\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**For each phase of Meiosis shown below, draw and label the components of the cell (nucleus, chromosomes, spindle fibers, centrosomes), write the name of the phase below the cell, and briefly describe what is happening in the cell during each phase.**

**Meiosis I**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Meiosis II**

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