

## Cell Division and Mitosis Worksheet

### Exercise 3

**Part 3c.** The G1 cell on your mat board presently contains a total of \_\_\_\_\_ chromosomes, each of which is \_\_\_\_\_ stranded. There are \_\_\_\_\_ pairs of homologous chromosomes in the cell. Because chromosomes are in homologous pairs, G1 cells are \_\_\_\_\_.

**Part 4.** Place the four replicated, double stranded chromosomes (strings) on the cell labeled G2 on your mat board. The G2 cell contains a total of \_\_\_\_\_ chromosomes that represent \_\_\_\_\_ pairs of homologous chromosomes. Each chromosome in G2 consists of \_\_\_\_\_ strands called \_\_\_\_\_. Because chromosomes are present in \_\_\_\_\_ pairs in G2 cells, cells are still \_\_\_\_\_ or  $2n$ . Notice that replication did not change the number of \_\_\_\_\_.

### Exercise 4

**Part 1d.** Draw a cell in prophase as it appears on the mat board and label the chromosomes, chromatids, and spindle fibers

**Part 1e.** Summary of prophase: During prophase \_\_\_\_\_ become shorter and thicker. The \_\_\_\_\_ and the \_\_\_\_\_ envelope disappear. \_\_\_\_\_ fibers, made of \_\_\_\_\_, form a football-shaped structure within the cell. Some microtubules attach to the \_\_\_\_\_ of the chromosomes. Because chromosomes are present in homologous pairs during prophase, the cell is \_\_\_\_\_ or \_\_\_\_\_n.

**Part 2c.** Draw a cell in metaphase as it appears on the mat board and label the chromosomes, chromatids, and spindle fibers.