

## CDL DAY 2

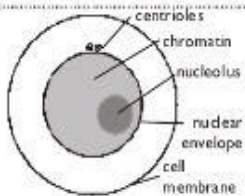
Name \_\_\_\_\_ Class period \_\_\_\_\_

Directions: Read this information. Then answer the following questions

### Details of Mitosis

These diagrams show the detailed stages of mitosis. This cell has  $n = 2$ ; i.e. 2 pairs of homologous chromosomes.

#### Interphase



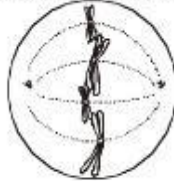
- no chromosomes visible
- DNA, histones and centrioles all replicated

#### Prophase



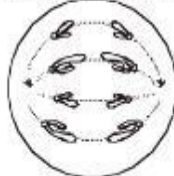
- chromosomes condensed and visible
- centrioles at opposite poles of cell
- nucleolus disappears

#### Metaphase



- nuclear envelope disappears
- chromosomes align along equator of cell
- spindle fibres (microtubules) connect centrioles to chromosomes

#### Anaphase



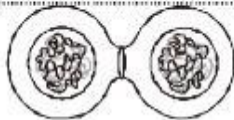
- centromeres split, allowing chromatids to separate
- chromatids move towards poles, centromeres first, pulled by motor proteins "walking" along the microtubule tracks

#### Telophase

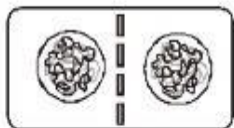


- spindle fibres disperse
- nuclear envelopes form
- chromatids uncoil and become too thin to see

#### Cytokinesis



- In animal cells a ring of actin filaments forms round the equator of the cell, and then tightens to form a cleavage furrow, which splits the cell in two.



- In plant cells vesicles move to the equator, line up and fuse to form two membranes called the cell plate. A new cell wall is laid down between the membranes, which fuses with the existing cell wall.

1. In which phase of mitosis is a cleavage furrow formed. \_\_\_\_\_
2. In metaphase, spindle fibers connect \_\_\_\_\_ to \_\_\_\_\_
3. In which phase are no chromosomes visible? \_\_\_\_\_
4. In plant cells, what is formed instead of a cleavage furrow? \_\_\_\_\_
5. The nucleolus disappears during \_\_\_\_\_.
6. In \_\_\_\_\_ chromosomes can't be seen and uncoil.
7. DNA is replicated during \_\_\_\_\_.
8. Motor proteins are involved in movement during this phase \_\_\_\_\_
9. The first phase in which you can tell there are two cells instead of one is \_\_\_\_\_
10. During which phase do chromosomes line up at the center or equator? \_\_\_\_\_