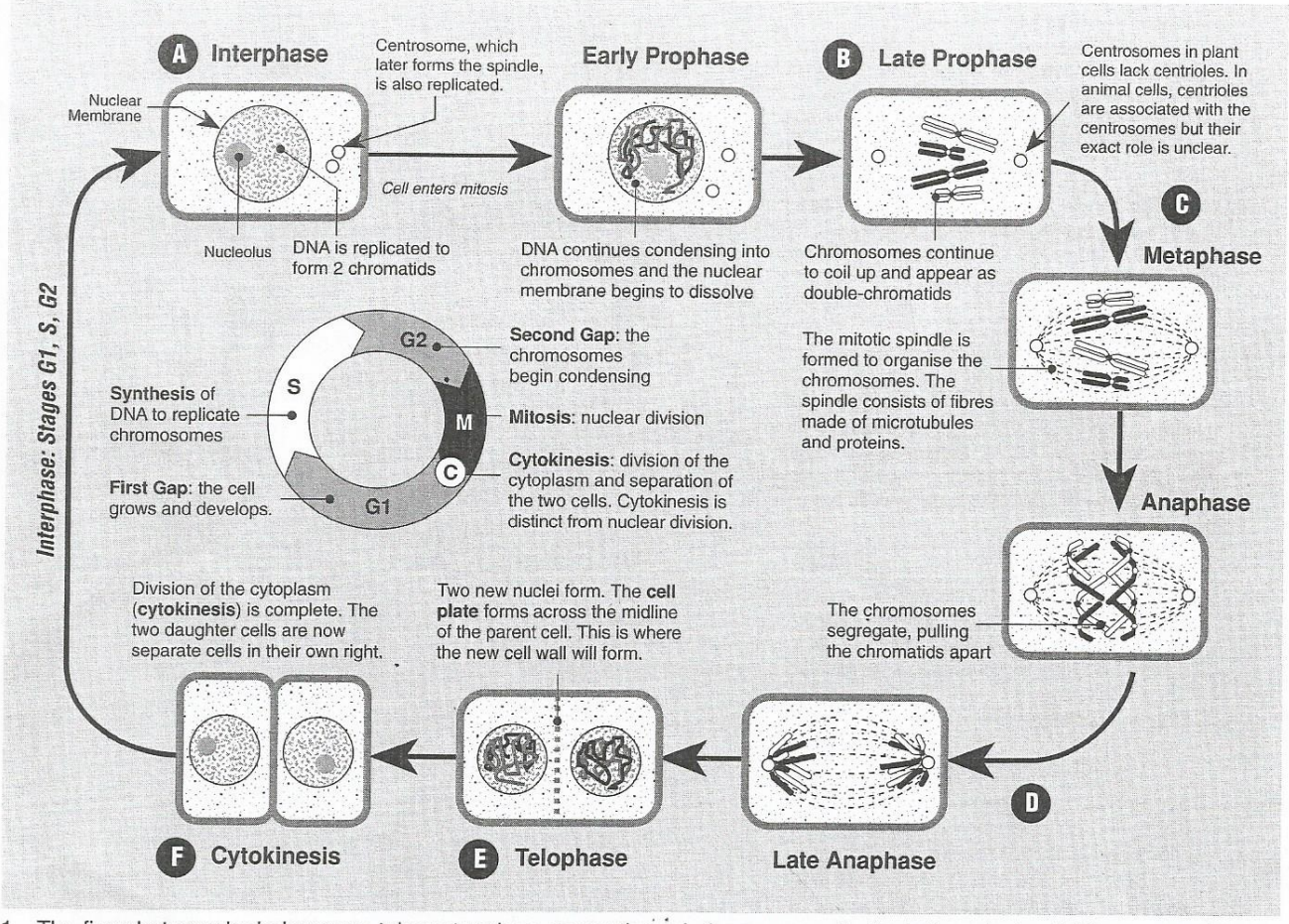
54

Name _____

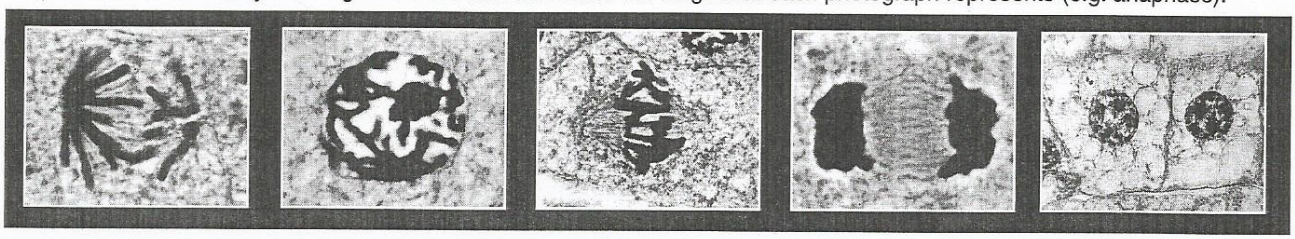
Mitosis and the Cell Cycle

Period _____

Mitosis is part of the '**cell cycle**' in which an existing cell (the parent cell) divides into two new ones (the daughter cells). Mitosis does not result in a change of chromosome numbers (unlike meiosis): the daughter cells are identical to the parent cell. Although mitosis is part of a continuous cell cycle, it is divided into stages (below). In plants and animals mitosis is associated with growth and repair of tissue, and it is the method by which some organisms reproduce asexually. The example below illustrates the cell cycle in a plant cell. Note that in animal cells, **cytokinesis** involves the formation of a constriction that divides the cell in two. It is usually well underway by the end of telophase and does not involve the formation of a cell plate.



1. The five photographs below were taken at various stages through the process of mitosis in a plant cell. They are not in any particular order. Study the diagram above and determine the stage that each photograph represents (e.g. anaphase).



(a) _____ (b) _____ (c) _____ (d) _____ (e) _____

2. State two important changes that chromosomes must undergo before cell division can take place:

_____

3. Briefly summarise the stages of the cell cycle by describing what is happening at the points (**A-F**) in the diagram above:

A. _____

B. _____

C. _____

D. _____

E. _____

Homework 5/23/17