

Cell Division

- 100 trillion cells that make up your body began from a single fertilized egg
- Example: red blood cells die and are replaced at a rate of one million every second

Why do cells divide?

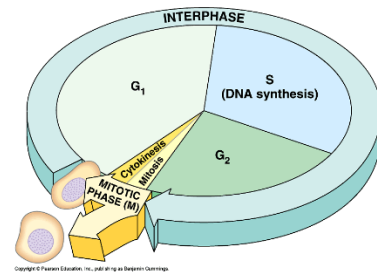
1. _____
 - a. An average human loses 105 pounds of dead skin cells in their life
2. _____
 - a. All plants and animals begin life as a single cell
3. _____
 - Create new organisms in unicellular organisms (Fission)
 - Creating gametes in multicellular organisms

The Cell Cycle

- A continuous process
 - The circle represents the entire life cycle of the cell, which can be divided into two major phases:
1. _____
 2. _____
- Most cells spend the majority of their time in _____

The Cell Cycle: Interphase

- **Interphase:** the period in the cell cycle during which the cell grows, matures, and duplicates genetic information.
- During interphase:
 - _____
 - _____
- in preparation for division



Interphase 3 Stages:

1. _____
 - Period of growth for a cell
 - Produces new proteins and organelles

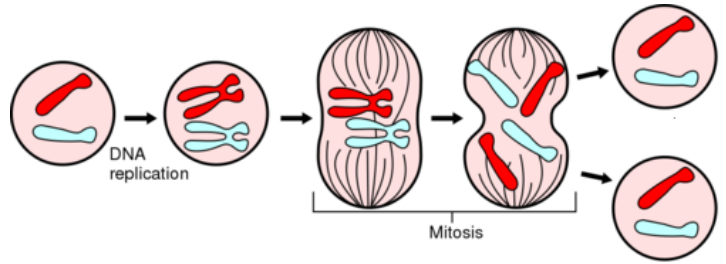
- 2. _____
 - Cell synthesizes entire copy of DNA
- 3. _____
 - Cell produces organelles and structures for cell division

Cell Division – Mitosis (PMAT)

- **Mitosis:** a type of cell division in which a

Full Cell Cycle (IPMAT-C)

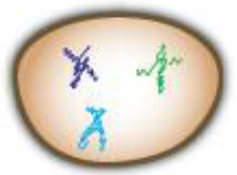
- _____
- _____
- _____
- _____
- _____
- _____



Mitosis: Prophase

- 1. _____
- 2. _____
- 3. _____

- _____: small protein tubes that _____ during cell division
- _____: protein structures that _____ during cell division



- _____ : the structure that _____ together

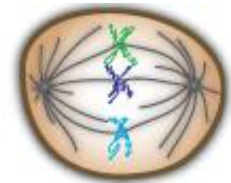
Chromosomes vs. Chromatin

- **Chromosomes**
 - _____
 - _____
 - _____
- **Chromatin**
 - _____
 - _____
 - _____

Mitosis: Metaphase

Metaphase -

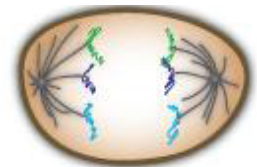
- Guided by the spindle fibers extending from the centrioles



Mitosis: Anaphase

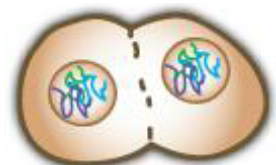
Anaphase -

- Pulled along by spindle fibers



Mitosis: Telophase

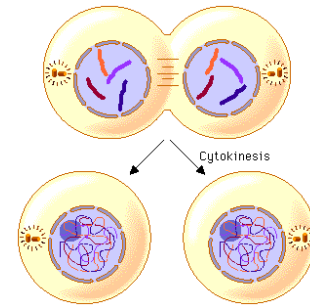
Telophase -



Cytokinesis

Cytokinesis:-

- After nuclear division
- Pinching off the cell into 2 parts



Mitosis - The Results!

- Mitosis results in _____ forming cells called _____
- each daughter cell has the _____ as the parent cell