CONCEPT: MITOSIS & MEIOSIS

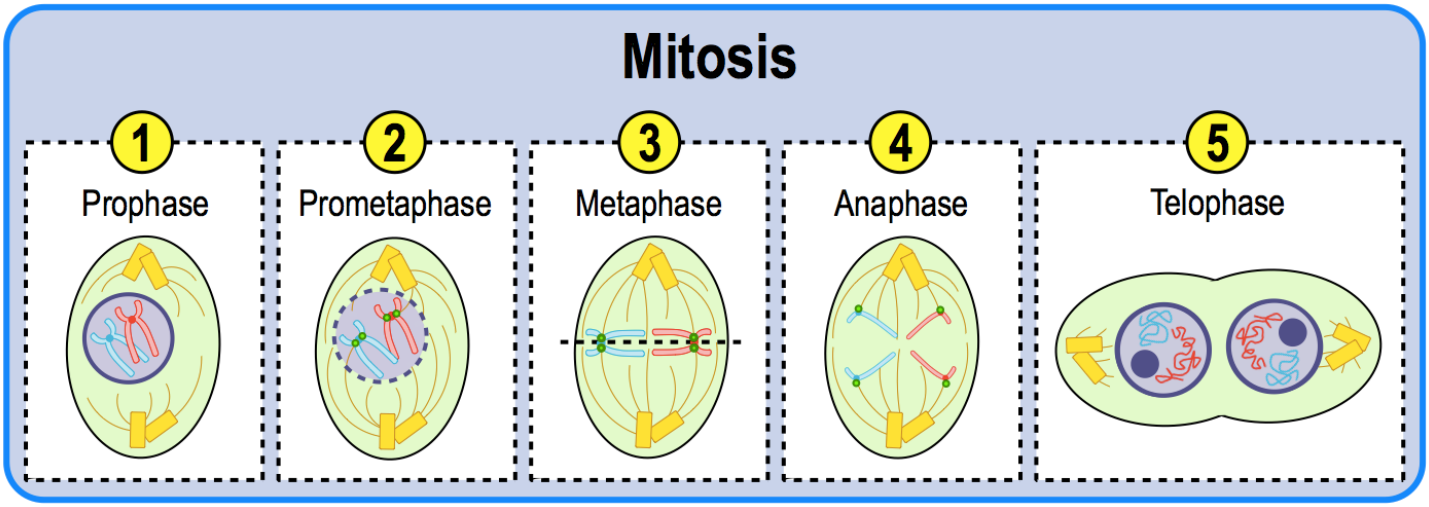
●Eukaryotic cells divide via either **Mitosis** or **Meiosis**.

Mitosis

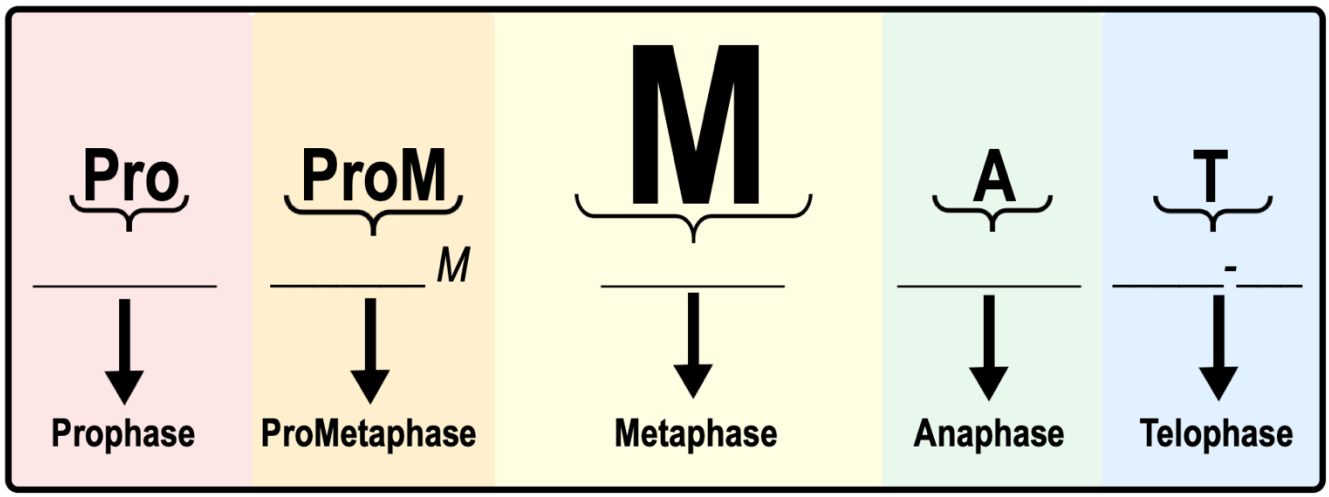
●_____: the asexual process of dividing the nucleus & the *genetic material* of a *somatic* (body) cell.

□ Starts with one *diploid* cell & ends with _____ genetically *identical* _____ cells.

□ Mitosis consists of _____ different phases:



How to Remember the Order of the Phases of Mitosis



CONCEPT: MITOSIS & MEIOSIS

PRACTICE: The correct sequence for the phases of mitosis is:

a) Prophase - prometaphase - metaphase - anaphase – telophase.

b) Prophase - prometaphase - anaphase - metaphase – telophase.

c) Prophase - prometaphase - metaphase - anaphase – telophase.

d) Prometaphase - prophase - metaphase - anaphase – telophase.

e) Metaphase - anaphase - interphase - prophase – telophase.

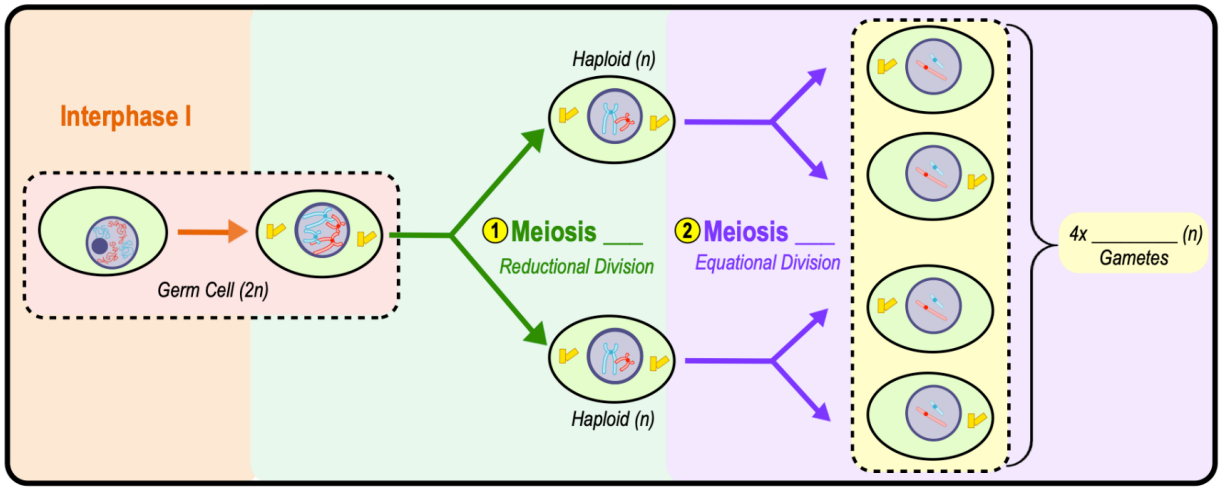
Meiosis

●Meiosis starts with a *diploid* _____ *cell* & ends with _____ genetically *diverse* _____ gametes.

●*Meiosis* is broken down into _____ rounds of cell division:

1. **Meiosis I** *(Reductional Division):* *reduces* ploidy by separating *homologous* _____.
   - □ *Diploid* (2*n*) germ cell divides into _____ *haploid* (*n*) daughter cells.
2. **Meiosis II** *(Equational Division):* maintains *equal* ploidy by separating *sister* _____.
   - □ *Haploid* (*n*) cells from meiosis I divide producing _____ genetically *diverse* haploid (*n*) gametes.

EXAMPLE: Meiosis I & Meiosis II.



PRACTICE: In Meiosis I, cytokinesis usually occurs after telophase I and produces:

a) Four diploid cells.

b) Two haploid cells.

c) Four haploid cells.

d) Two diploid cells.

PRACTICE: In Meiosis II, _____ cells are divided into 4 _____ daughter cells.

a) Diploid; Haploid.

b) Haploid; Diploid.

c) Haploid; Haploid.

d) Diploid; Diploid.