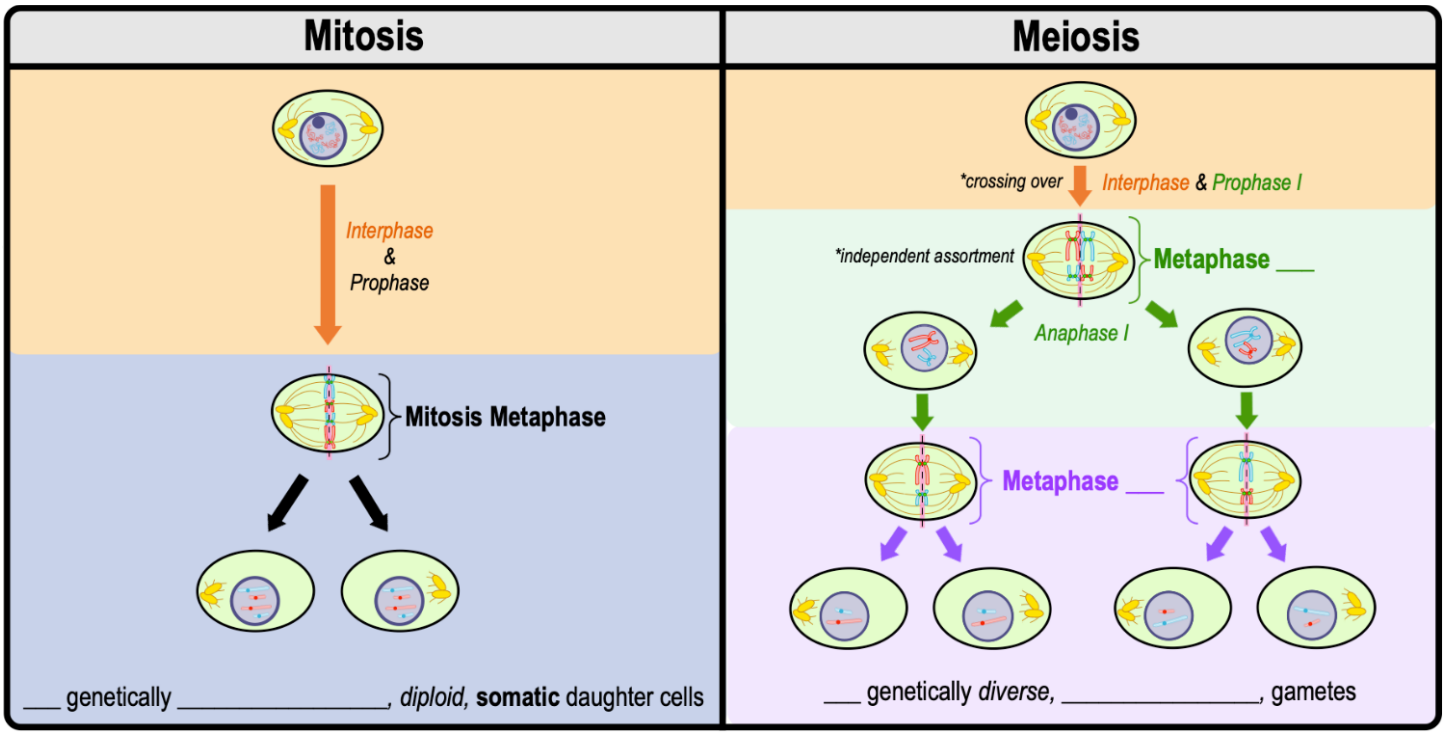
CONCEPT: MITOSIS & MEIOSIS REVIEW

●Mitosis & Meiosis have some similarities but are also very different.



EXAMPLE: Which of the following statements describes a difference between mitosis and meiosis I in a diploid organism?

a) Sister chromatids separate in mitosis, while homologous pairs of chromosomes separate in meiosis I.

b) Sister chromatids separate in mitosis and in meiosis I.

c) DNA replication takes place prior to mitosis, but not before meiosis I.

d) Only meiosis I results in daughter cells that contain identical genetic information.

PRACTICE: During which of the following processes do sister chromatids separate from each other?

a) During meiosis I only.

b) During meiosis II only.

c) During both mitosis and meiosis I.

d) During both mitosis and meiosis II.

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PRACTICE: Which of the following statements describes a difference between meiosis II and mitosis in a diploid organism?

a) Sister chromatids align along the metaphase plate in mitosis while homologous chromosomes align in meiosis II.
b) Sister chromatids separate in mitosis and homologous chromosomes separate in meiosis II.
c) Meiosis II occurs in a haploid cell, while mitosis occurs in a diploid cell.
d) Crossing over of chromosomes takes place in meiosis II and does not take place in mitosis.

PRACTICE: Which of the following processes occurs in meiosis but not in mitosis?

a) Chromosome replication during interphase.
b) Synapsis of chromosomes during prophase.
c) Alignment of chromosomes at the center of the cell.
d) Condensation of chromosomes during prophase.
e) None of the above.

PRACTICE: What does it mean when we say that mitosis and meiosis II are forms of "equational division" while meiosis I is a form of "reductional division"?

a) Daughter cells of mitosis and meiosis II are both diploid while the daughter cells of meiosis I are haploid.
b) The number of chromosomes in daughter cells of meiosis I is half the number of chromosomes of the parent cell.
c) The number of chromosomes in daughter cells of mitosis and meiosis II is equal to the number of chromosomes in the parent cells.
d) A and B.
e) B and C.
f) All of the above.