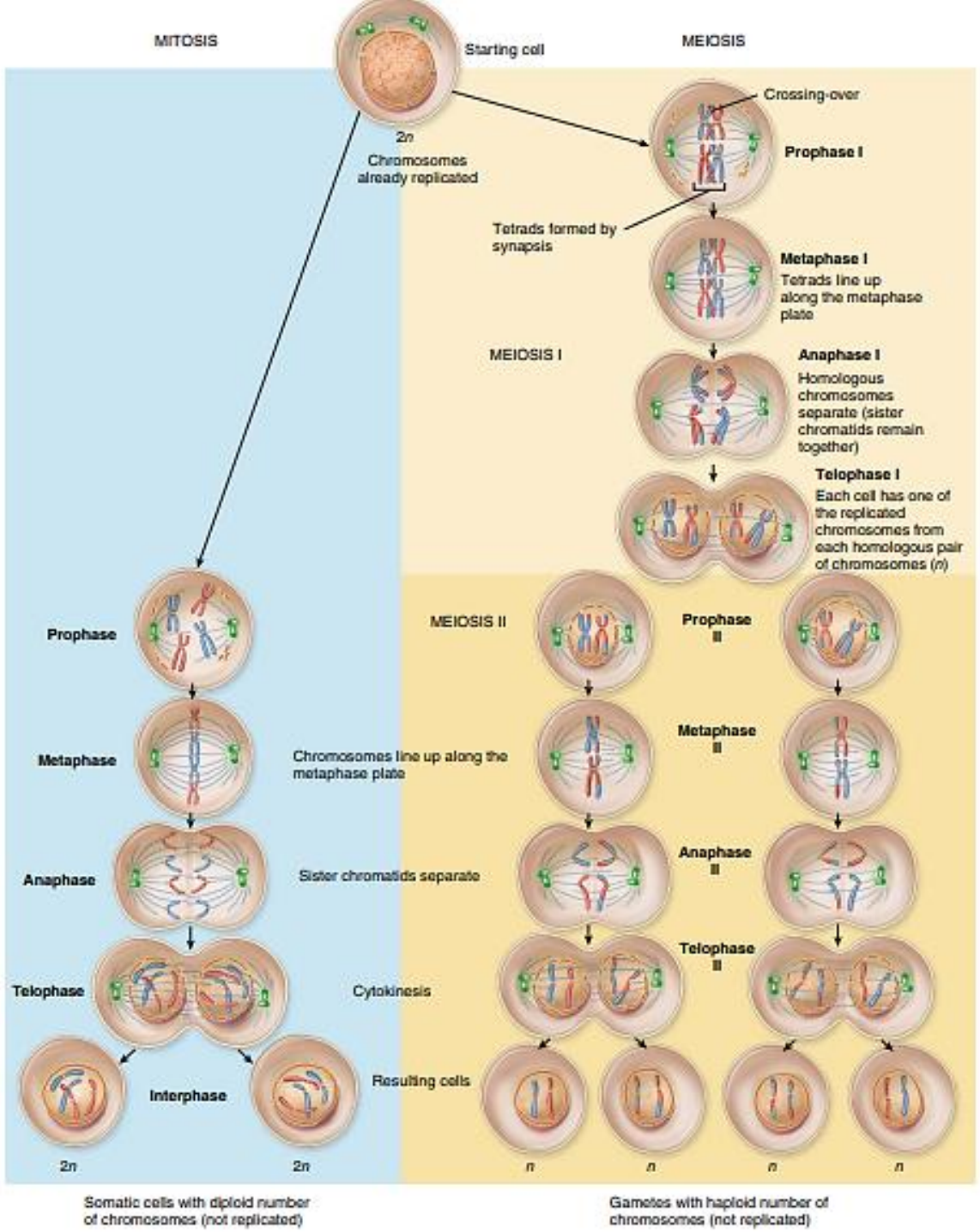
Cell Division

- Most cells of the human body undergo cell division, the process by which cells reproduce themselves.
- The two types of cell division accomplish different goals for the organism—

1. Somatic cell division and 2. Reproductive cell division

- A somatic cell (soma = body) is any cell of the body other than a germ cell.
- A germ cell is a gamete (sperm or oocyte) or any precursor cell destined to become a gamete.
- In somatic cell division, a cell undergoes a nuclear division called mitosis (mitos = thread) and a cytoplasmic division called cytokinesis (cyto- = cell; -kinesis = movement) to produce two genetically identical cells, each with the same number and kind of chromosomes as the original cell. Somatic cell division replaces dead or injured cells and adds new ones during tissue growth.
- Interphase consists of three phases: G1, S, and G2



POINT OF COMPARISON	MITOSIS	MEIOSIS
Cell type	Somatic.	Gamete.
Number of divisions	1	2
Stages	Interphase.	Interphase I only.
	Prophase.	Prophase I and II.
	Metaphase.	Metaphase I and II.
	Anaphase.	Anaphase I and II.
	Telophase.	Telophase I and II.
Copy DNA?	Yes, interphase.	Yes, interphase I; No, interphase II.
Tetrads?	No.	Yes.
Number of cells	2.	4.
Number of chromosomes per cell.	46, or two sets of 23; this makeup, called diploid (2n), is identical to the chromosomes in the starting cell.	One set of 23; this makeup, called haploid (n), represents half of the chromosomes in the starting cell.