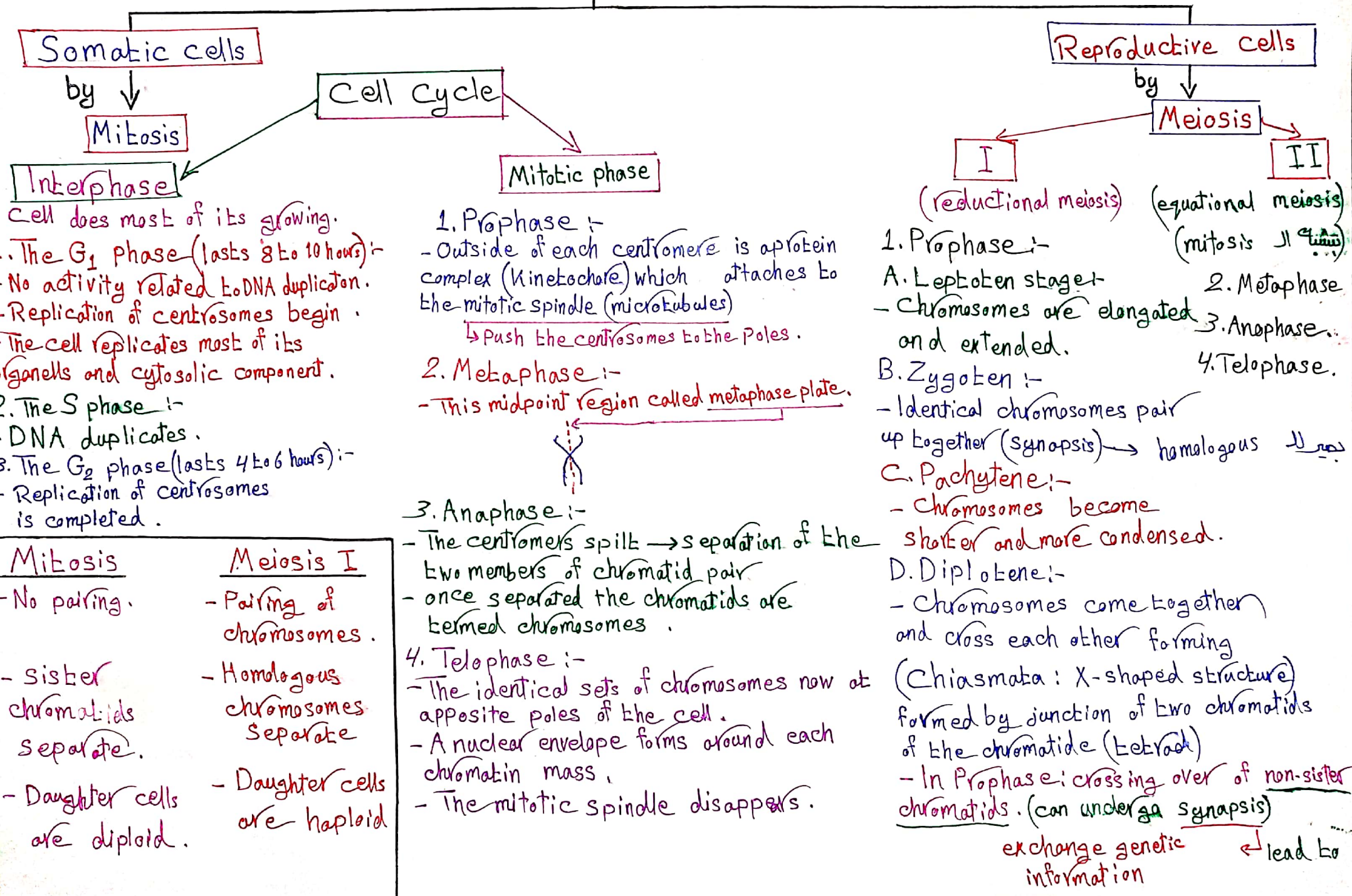


Cell Division



Cell does most of its growing.

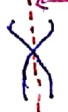
- The G₁ phase (lasts 8 to 10 hours) :-
 - No activity related to DNA duplication.
 - Replication of centrosomes begin.
 - The cell replicates most of its organelles and cytosolic component.
- The S phase :-
 - DNA duplicates.
- The G₂ phase (lasts 4 to 6 hours) :-
 - Replication of centrosomes is completed.

1. Prophase :-

- Outside of each centromere is a protein complex (Kinetochore) which attaches to the mitotic spindle (microtubules)
- ↳ Push the centrosomes to the poles.

2. Metaphase :-

- This midpoint region called metaphase plate.



3. Anaphase :-

- The centromeres split → separation of the two members of chromatid pair
- once separated the chromatids are termed chromosomes.

4. Telophase :-

- The identical sets of chromosomes now at opposite poles of the cell.
- A nuclear envelope forms around each chromatin mass.
- The mitotic spindle disappears.

(reductional meiosis)

1. Prophase :-

A. Leptotene stage :-

- Chromosomes are elongated and extended.

B. Zygotene :-

- Identical chromosomes pair up together (synapsis) → homologous chromosomes

C. Pachytene :-

- Chromosomes become shorter and more condensed.

D. Diplotene :-

- Chromosomes come together and cross each other forming (Chiasmata: X-shaped structure) formed by junction of two chromatids of the chromatide (tetrad)
- In Prophase I crossing over of non-sister chromatids. (can undergo synapsis)

exchange genetic information → lead to

Mitosis	Meiosis I
- No pairing.	- Pairing of chromosomes.
- sister chromatids separate.	- Homologous chromosomes separate
- Daughter cells are diploid.	- Daughter cells are haploid