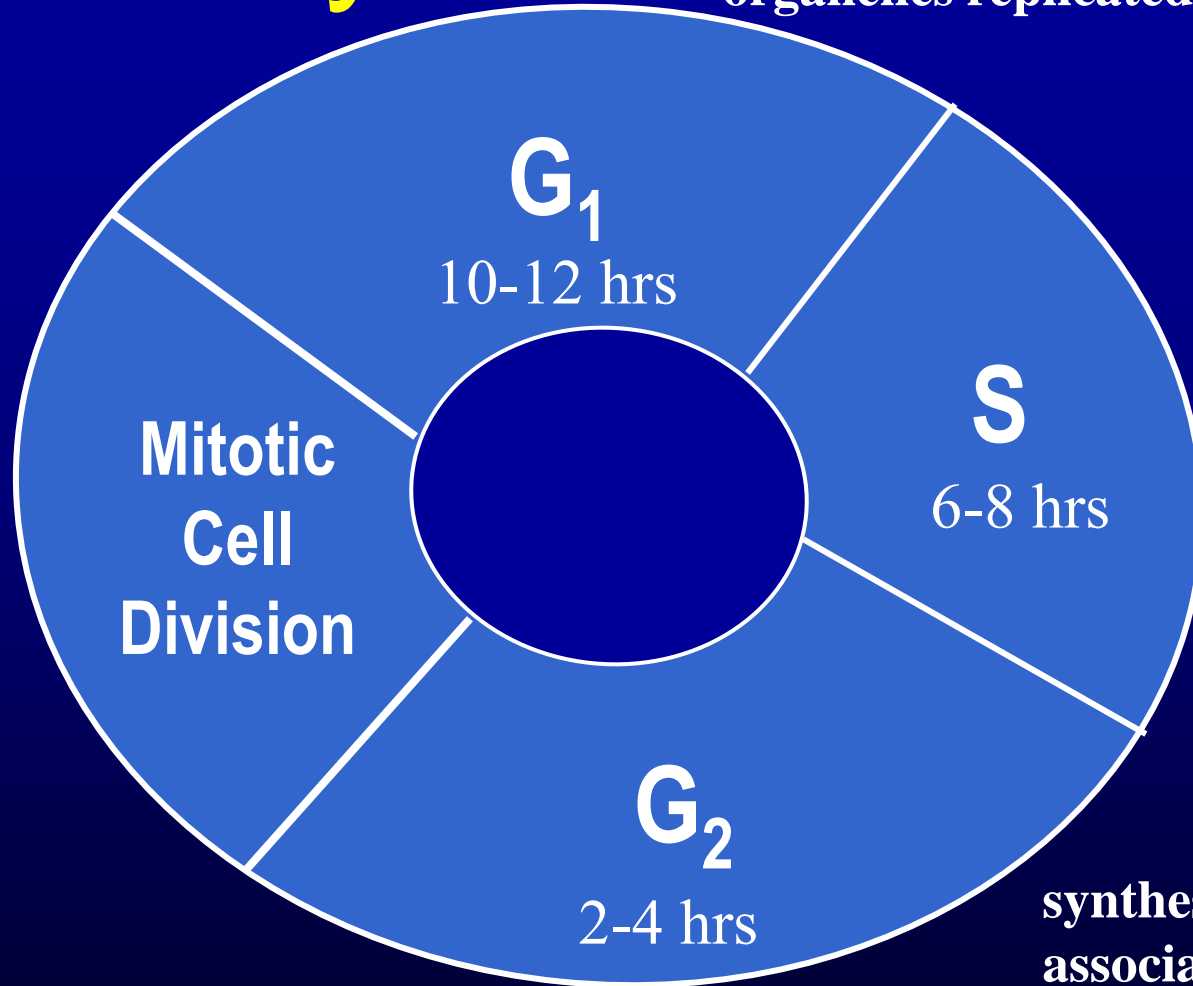


Cell Cycle

cell grows in size
organelles replicated

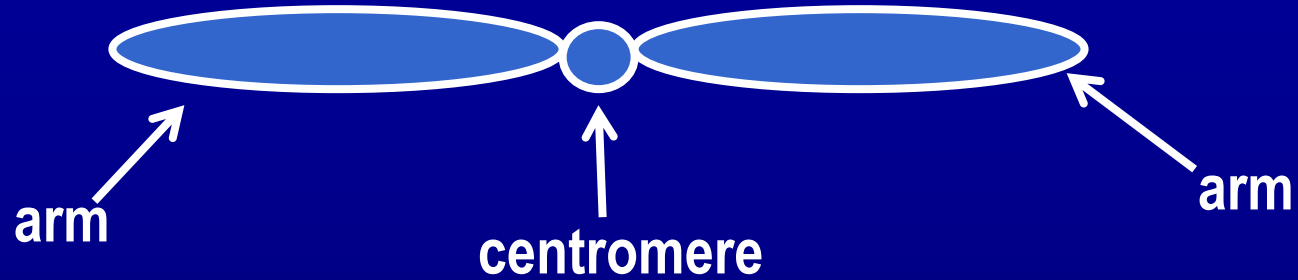
Interphase = G_1 , S, G_2
(non dividing)



**replication of DNA,
synthesis of proteins
associated with DNA**

**synthesis of proteins
associated with mitosis**

Unreplicated Chromosome



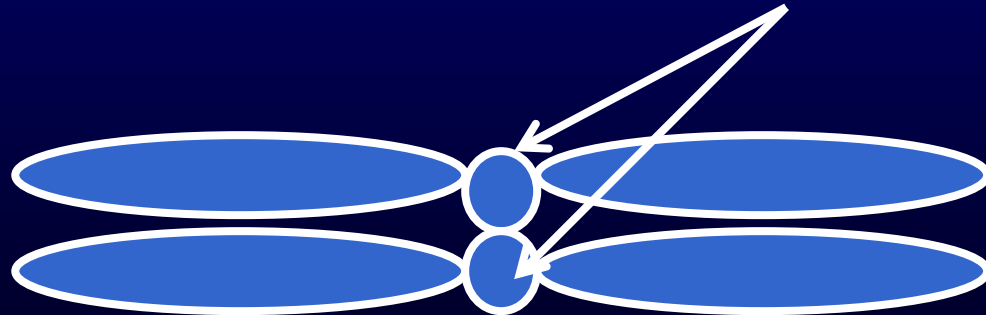
S phase

- Chromosomes (DNA) are replicated

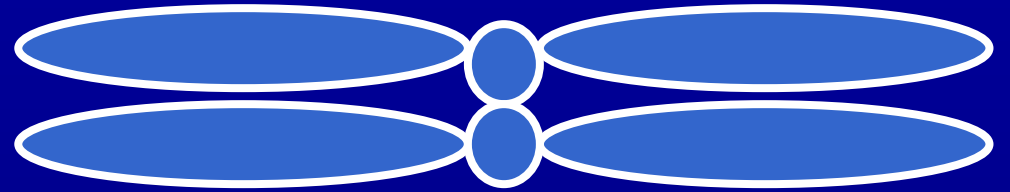


**duplicated
chromosome** {

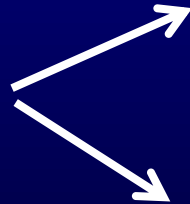
**2 sister chromatids
– Attached at their centromeres**



Duplicated chromosome
2 sister chromatids



2 daughter
chromosomes



The Phases of Mitosis

4 phases:

1st – Prophase

2nd – Metaphase

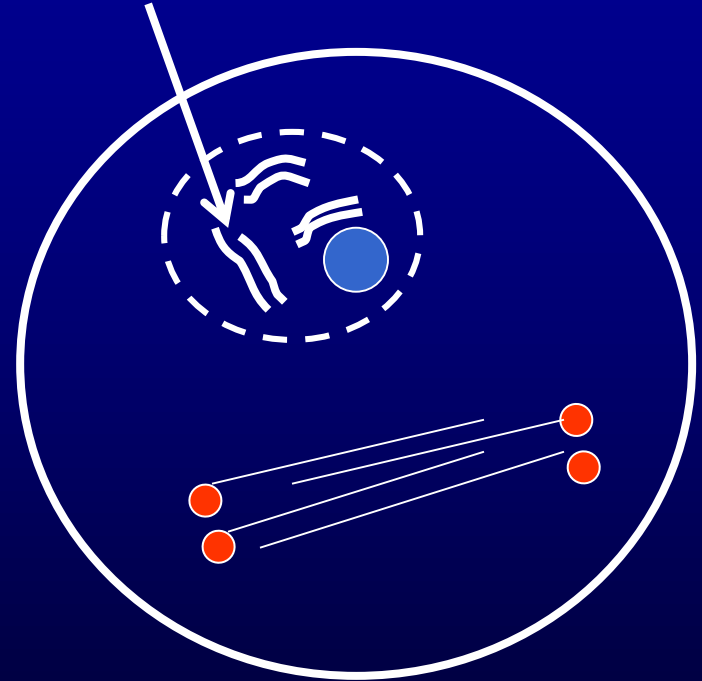
3rd – Anaphase

4th – Telophase/Cytokinesis

Prophase

- Nuclear envelope breaks down
- Spindle fibers form
- centrioles to poles

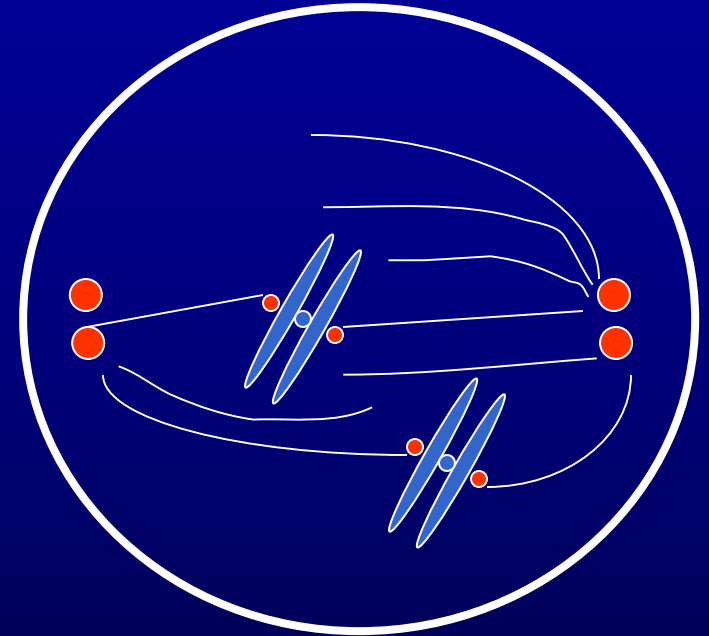
condensing
chromosomes



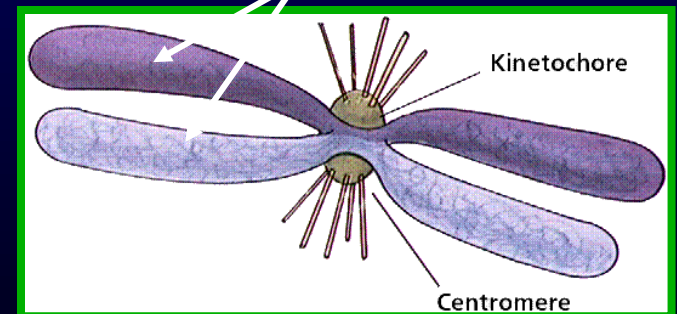
Prometaphase

The Spindle Captures Chromosomes

- spindle fibers are fully formed, nuclear envelope gone, nucleolus disappears

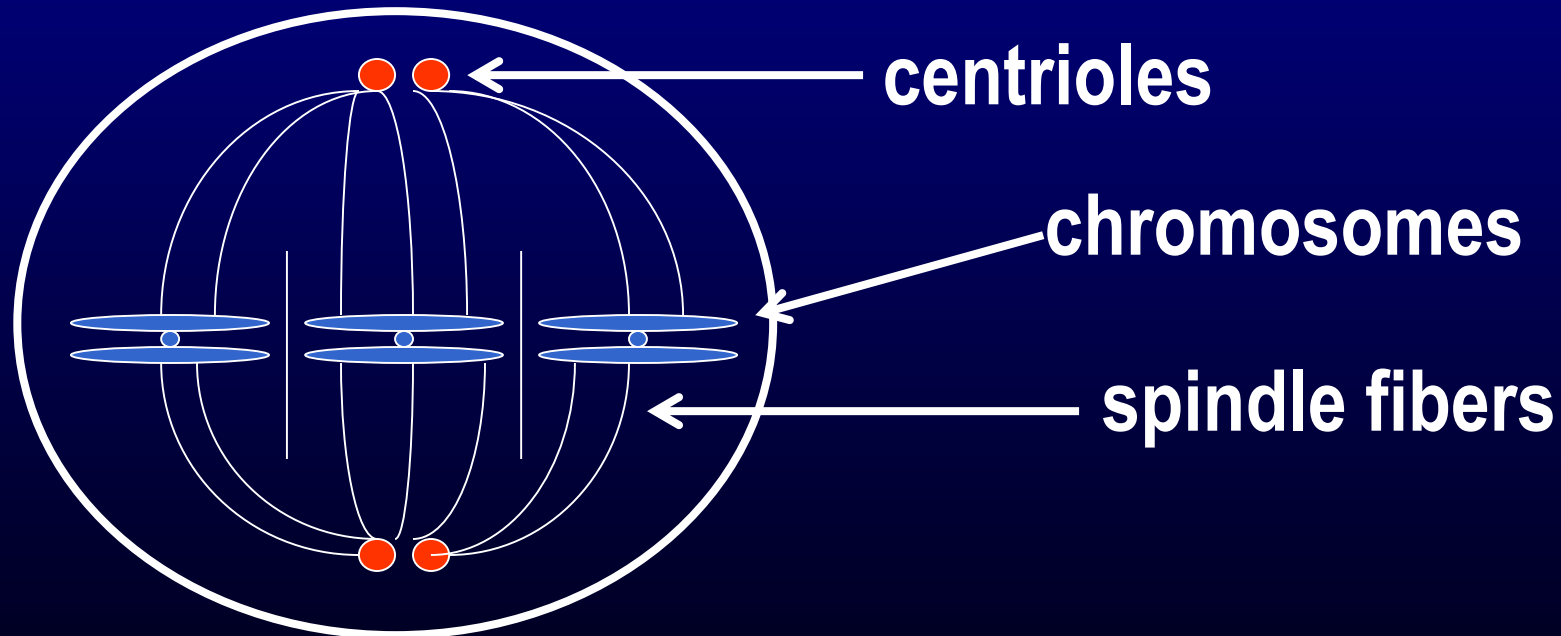


Duplicated chromosome
(2 sister chromatids)



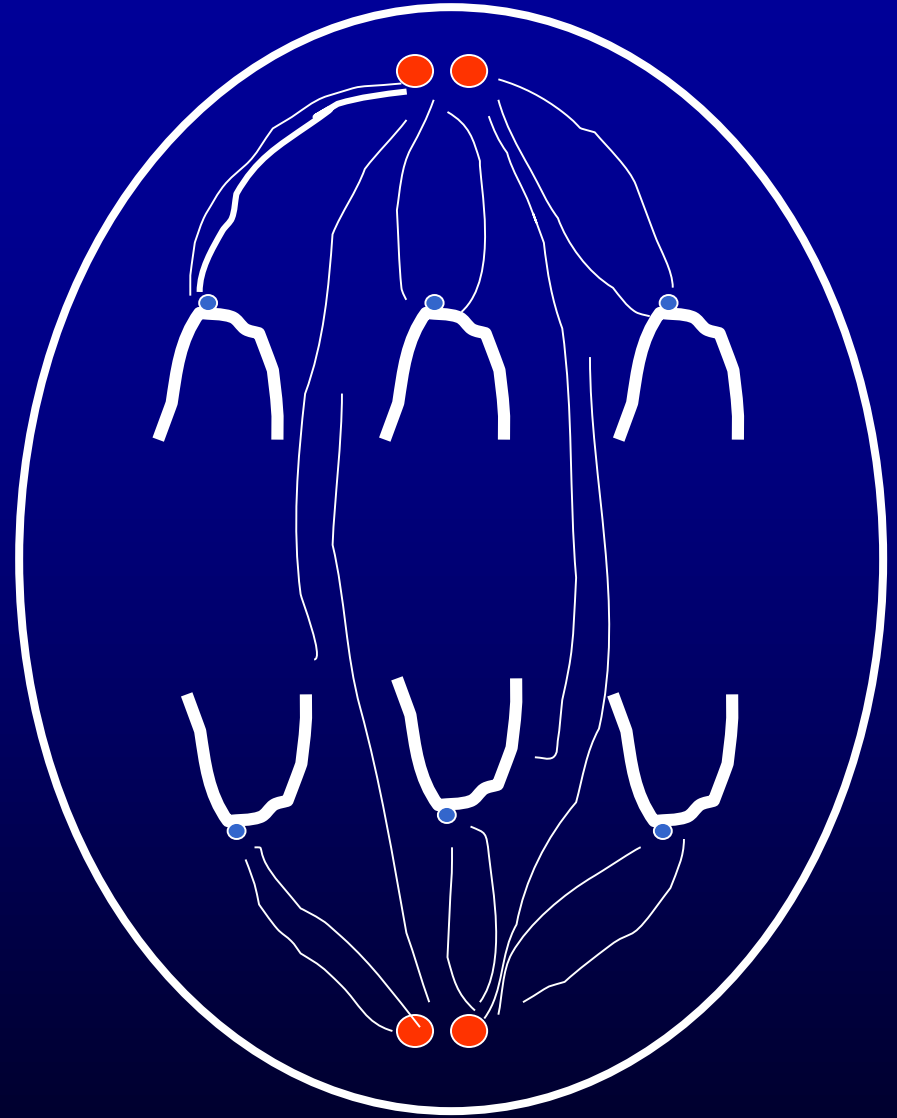
Metaphase

Chromosomes align along equator of the cell



Anaphase

- **Sister chromatids separate**



Telophase

