

Cell Reproduction

Interphase

- cell is not dividing
- doing its job
- * most of the cell's life
- * DNA as chromatin, not chromosomes



when cell decides to divide, DNA replicates



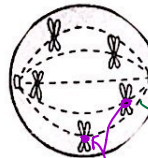
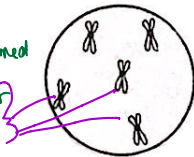
Chromatin



- nucleus disappears
- chromatin condenses into chromosomes

Prophase

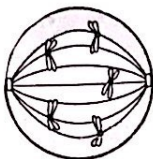
- chromosomes formed and
- pair up as sister chromatids



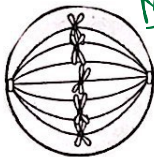
Late prophase

Centrosomes
spindle fibers form and attach to centromere

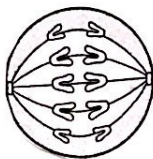
Spindle fibers begin to line up sister chromatids at equator



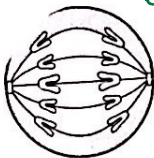
Metaphase - spindle fibers line up sister chromatids at cell equator



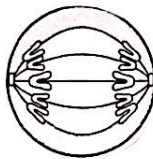
Anaphase



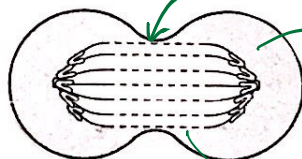
Centrosomes retract spindle fibers, pulling 1 sister chromatid from each pair towards a centrosome (pole)



Telophase

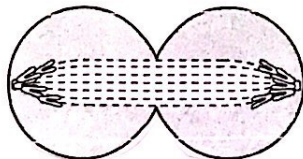
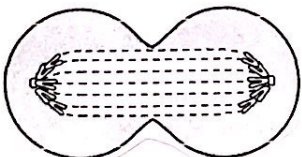


Cleavage furrow



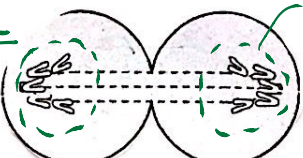
Cytoplasm and all organelles divide up

spindle fibers dissolve



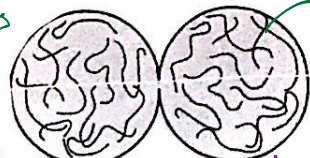
Telophase

new nuclei form, one for each new cell



Cytokinesis
entire cell splits apart, yielding 2 identical cells

Chromosomes unwind into chromatin



Result: 2 identical cells



NOTE: about HALF of all other organelles go into each new cell

