Class Review Sheet

2/15/12

Chromatin - loose DNA found in nucleus (Interphase)

Chromosome - compacted DNA (compacts during prophase)

Chromatid - 1/2 of chromosome (split during anaphase)

Centromere - holds 2 chromatids together to make a chromosome

- Differences between Plant & animal cells during Mitosis
  - centrioles only in animal cells
  - cell plate only in plant cells

- Gametes are made by Meiosis (sex cells) sperm & egg
  1 cell → 4 cells with 1/2 # of chromosomes

- If cytokinesis was skipped = 

- **fertilization** is the joining of sperm & egg → zygote results
- **Cytokinesis** is the splitting of the organelles & cytoplasm into 2 identical daughter cells.

- Horse body cells = 32 chromosomes

sperm cell	16		eye cell	32 ← Body cell!
egg cell	16		fertalized egg cell	32

- Your bone cells divide & grow (Mitosis) as you grow taller
- Sex cells have half the # of chromosomes of body cells so that after fertilization they will have the right # and not too many

- Cell division is asexual reproduction for single cell organisms
  ex. hydra, paramecium

- Before Mitosis DNA (as chromatin) must duplicate (replicate)

Interphase

Cytokinesis

Mitosis

called the "cell cycle" because it repeats & continues. cells move from one to the next & don't have an end.

grow → develop → divide →

daughter cells enter Interphase after cytokinesis creates them

Mitosis - 4 parts PMAT

- 2 identical nuclei are made
- Part of cell division
- same # of chromosomes as the parent cell.
- Process is done to grow, repair & reproduce asexually
- Makes all body cells

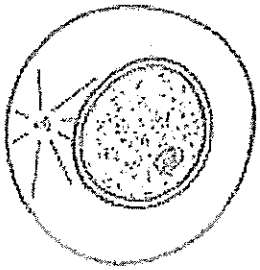
Meiosis - (2 cell divisions in a row)

Makes only sex cells

- 1 cell becomes 4 cells
- each with ½ DNA ½ # of chromosomes
- Produces gametes, sex cells
  - sperm
  - egg

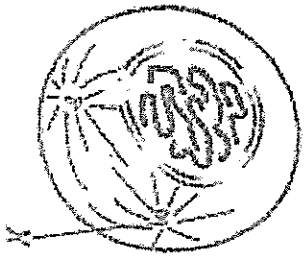
Interphase

- DNA is chromatin
- Cell grows & lives
- centrioles are made
- 75% of cells life



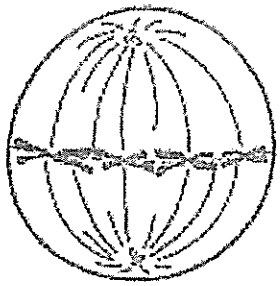
Prophase

- DNA compacts into chromosomes
- Nuclear membrane fades
- centrioles move to poles
- spindle fibers form.



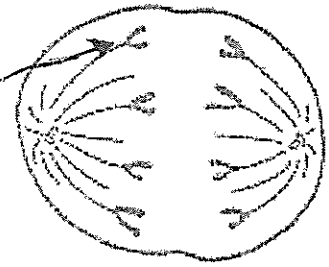
Metaphase

- chromosome line up in middle of cell
- spindle fibers attach to chromosomes at centromeres.



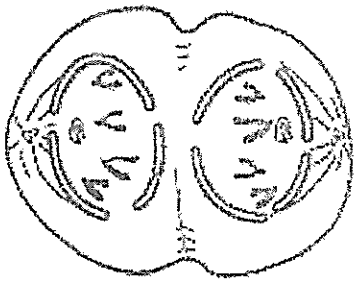
Anaphase

- spindle fibers pull chromosomes apart & away
- chromatids are ½ chromosomes



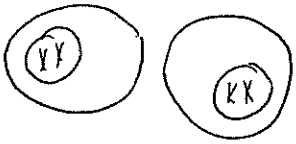
Telophase

- DNA begins to return to chromatin
- cell membranes reform
- 2 new nuclei
- animal cells pinch
- Plant cell for cell plate
- centrioles & spindle fiber fade



Cytokinesis

- Organelles & cytoplasm split
- 2 identical daughter cells are formed
- same # of chromosomes
- half the size



Cancer is uncontrolled cell division. Mitosis over & over without Interphase!