

Name: KEY Period: _____ Date: _____

Mitosis and Meiosis Review

	Mitosis	Meiosis
Type of cells where process occurs	body / somatic cells	gametes / sex cells
Are the Daughter Cells Haploid or Diploid?	diploid	haploid
Compare the number of chromosomes in the new daughter cell to the original cell	same (2n)	half (n)
In humans- how many chromosomes in daughter cells?	46	23
How many cells are made in the end?	2	4
Genetically identical or not?	identical	NOT identical - variation
Purpose/Function/Importance	asexual repro. - repair - growth	- sexual reproduction
How many times does a cell divide?	1 division	2 divisions

List some examples of body cells: blood, skin, muscle

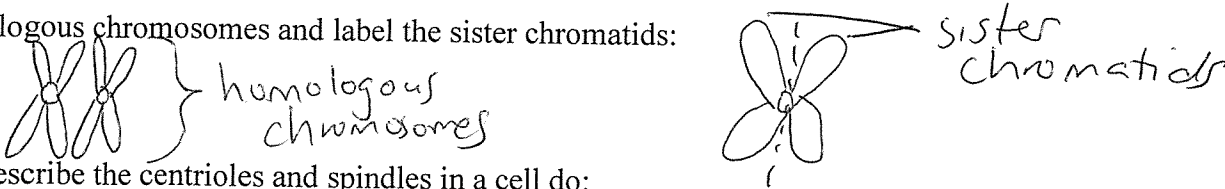
List some example of sex cells: Sperm, egg

When a sperm cell and egg cell meet what do they form? Zygote

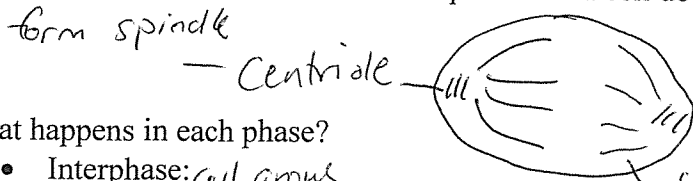
What's the scientific name of the process when a sperm cell meets an egg cell? fertilization

True or False (circle): Cancer cells go through mitosis uncontrollably (all the time)

Draw homologous chromosomes and label the sister chromatids:



Draw and describe the centrioles and spindles in a cell do:



What happens in each phase?

- Interphase: cell grows
copy chromosomes
- Prophase: chromatin condenses
- nuclear membrane dissolves
- Metaphase:
- chromosomes line up in middle of cell (equatorial plate)
- spindles start to form + grow

- Anaphase: chromosomes are pulled apart by spindle fibers
- Telophase: cytoplasm begins to pinch. 2 nuclei form
- Cytokinesis: Chromosomes de-condense into chromatin
2 separate cells

# of chromosomes in original cell	Process	Number of daughter cells	Number of chromosomes inside daughter cells	Are the daughter cells haploid or diploid?
Diploid, 66	Meiosis	4	33	haploid
Diploid, 66	Mitosis	2	66	diploid
Diploid, 18	Meiosis	4	9	haploid
Diploid, 18	Mitosis	2	18	diploid
Diploid, 20	Meiosis	4	10	haploid
Diploid, 20	Mitosis	2	20	diploid
Diploid, 4	Meiosis	4	2	haploid
Diploid, 4	Mitosis	2	4	diploid

A body cell of a mouse has 40 chromosomes:

- What is the cell's diploid chromosomes number? 40
- What is the cell's haploid chromosome number? 20
- How many chromosomes does the muscle cell have? 40
- How many chromosomes does the egg cell have? 20

A sex cell of a frog has 18 chromosomes:

- What is the cell's diploid chromosomes number? 18
- What is the cell's haploid chromosome number? 9
- How many chromosomes does the nail cell have? 18
- How many chromosomes does the sperm cell have? 9

What is the difference between haploid and diploid? 2 sets of chromosomes
half # chromosomes

What type of cells are diploid (body cells or sex cells)?

What type of cells are haploid (body cells or sex cells)?

What process makes haploid cells (mitosis or meiosis)?

What process makes diploid cells (mitosis or meiosis)?

For each of the following, state if the cell is haploid or diploid:

- Sperm cell: haploid
- Liver cell: diploid
- Hair cell: diploid
- Nail cell: diploid
- Egg cell: haploid
- Stomach cell: diploid

Unit 6 Outcome 1 Meiosis Coloring Worksheet

Name _____ Date _____

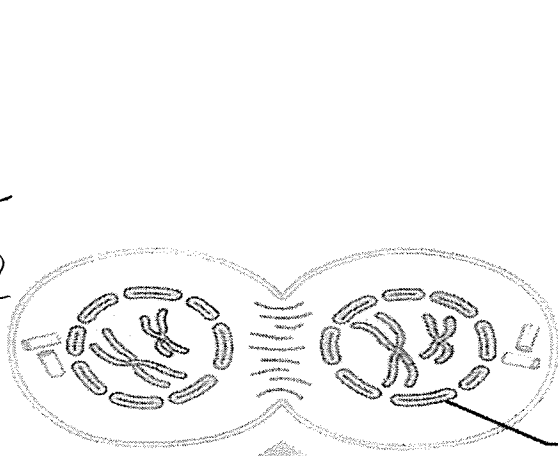
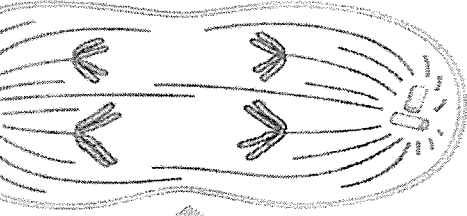
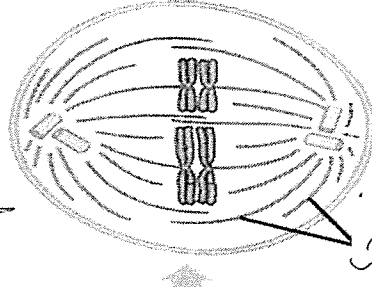
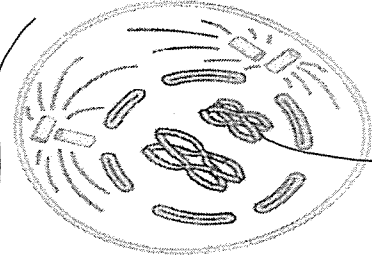
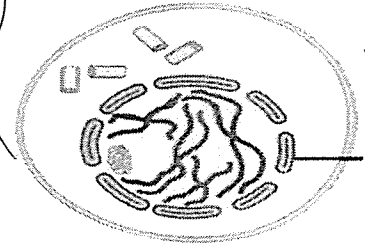
Period _____

Directions:

- Label all phases.
- Label all key structures (homologues, sister chromatids, centromere, nuclear membrane, spindle fibers, nucleus).
- Write a brief description of each phase (don't forget crossing over).
- Label each cell diploid or haploid.
- Color each chromosome.
 - Color one homologous pair of chromosomes dark _____ and light _____. Choose the same color.
 - Color the other homologous pair of chromosomes dark _____ and light _____. Choose the same color, but different from step a.
 - DON'T forget to color your chromosomes accurately throughout all of the phases. Be careful of the crossing over!

Meiosis I

Prophase I



HAPLOID

Unit 6 Outcome 1 Meiosis Coloring Worksheet

Name _____ Period _____ Date _____

Meiosis II

