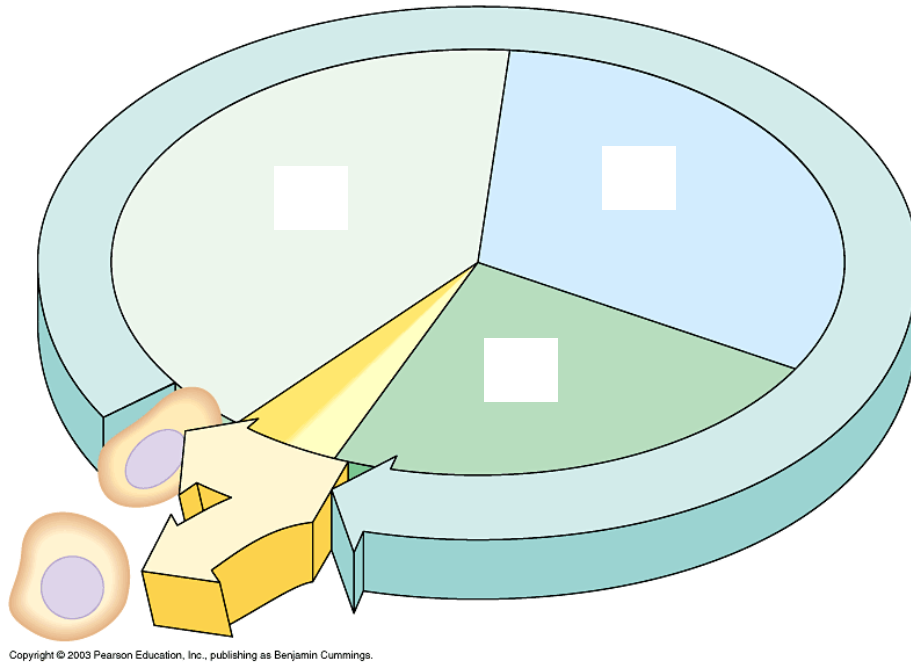


Chapter 8 – *The Cellular Basis of Reproduction*

EXAM REVIEW

Review the cell cycle: First identify the parts of the cycle and place them in order by writing the name of each phase or process on the diagram. Choose from: **S, interphase, mitosis, G<sub>1</sub>, mitotic phase, cytokinesis, and G<sub>2</sub>**. Then add a brief description of what is happening during that portion of the cycle. Choose from: **DNA synthesis, cell growth, division of cytoplasm, activity between divisions, division of nucleus and chromosomes, activity between DNA synthesis and division, and mitosis plus cytokinesis.** {Web/CD Activity 8A}



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Match the word or phrase on the right with the correct role in mitosis in an animal cell on the left.  
{Web/CD Activity 8B}

- |  |                               |
|--|-------------------------------|
| A. Where spindle microtubules attach to chromosomes            | _____ 1. Metaphase plate      |
| B. Move chromosomes  | _____ 2. Kinetochores         |
| C. Pulled apart by spindle microtubules                        | _____ 3. Sister chromatids    |
| D. Material around centrioles from which mitotic spindle grows | _____ 4. Spindle microtubules |
| E. Chromosomes come to rest here during metaphase              | _____ 5. Centrosome           |

Summarize mitotic cell division. Briefly describe the appearance and activities of each of these cell parts during interphase and the four stages of mitosis. Include a simple sketch for each phase. {Web/CD Activity 8B}

Activities	Interphase	Prophase	Metaphase	Anaphase	Telophase
Nucleus and nuclear envelope					
Mitotic spindle					
Chromosomes					
Cell size and shape					
Sketch					

Describe the relationship between the terms/items in each of the following pairs. {Web/CD Activity 8D}

a. sex chromosomes and autosomes

b. the two chromosomes of a homologous pair

c. the two sister chromatids of a single chromosomes

d. a diploid cell and a haploid cell

e. a somatic cell and a gamete

f. an egg and a zygote

g. fertilization and meiosis

h. mitosis and meiosis

i. X and Y chromosomes

Compare mitosis and meiosis by completing the chart {Module 8.15}

**Mitosis**

**Meiosis**

\_\_\_\_\_

involves one cell division

produces two daughter cells

\_\_\_\_\_

individual chromosomes line up at metaphase plate

no crossing over occurs

\_\_\_\_\_

produces haploid daughter cells unlike parent cell

\_\_\_\_\_

\_\_\_\_\_

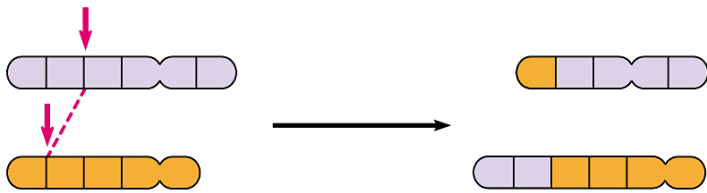
homologous chromosomes pair and then separate

\_\_\_\_\_

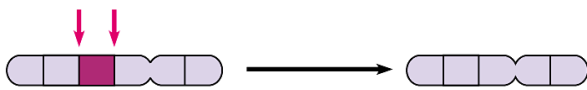
\_\_\_\_\_

needed for sexual reproduction

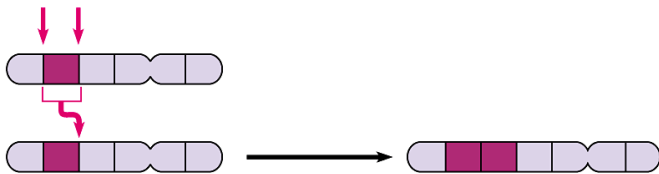
Chromosomes sometimes break, their parts can become scrambled, and abnormalities can result. Identify each of the diagrams of chromosome alterations with its name and a description of its effects.



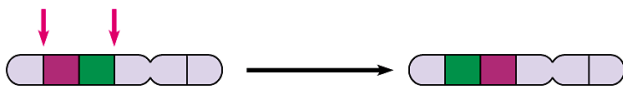
A. \_\_\_\_\_:



B. \_\_\_\_\_:



C. \_\_\_\_\_:



D. \_\_\_\_\_: