Advanced (Honors) Biology
Mrs. Senegar-Mitchell

Name_____

CHAPTER 8 – The Cellular Basis of Reproduction and Inheritance

Chapter Reading Guide

I. WORD STUDY

Please complete the following cloze passage section by determining the meaning of each root and then fill in the missing definition of the term which contains the root.

a. **ana-** = _____ (*anaphase*: the mitotic stage in which _____ _____ _____ of the cell)

b. **auto-** = _____(*autosome*: the chromosomes _____)

c. **bi-** = _____(*binary fission*: _____ in which a cell divides in half)

d. **centro-** = _____ **-mere** = _____ (*centromere*: the _____ chromosome)

e. **chiasm-** = _____ (*chiasma*: the X-shaped microscopically visible region representing _____ _____ _____)

f. **chroma-** = _____(*chromatin*: DNA and the various associated proteins that _____)

g. **cyto-** = _____; **-kinet** = _____(*cytokinesis*: ____ _____)

h. **di-** = _____(*diploid*: cells that contain _____ chromosomes)

i. **fertil-** = _____(*fertilization*: process of _____ _____)

j. **gamet-** = _____ (*gamete*: a haploid _____)

k. **gen-** = _____ (*genome*: a cell's _____)

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l. **inter-** = _____(*interphase*: _____ and performs its various functions)

m. **haplo-** = _____(*haploid*: cells that contain _____ _____)

n. **karyo-** = _____(*karyotype*: a display of _____)

o. **meio-** = _____(*meiosis*: a variation of cell division _____ _____)

p. **meta-** = _____(*metaphase*: the mitotic stage in which _____ _____)

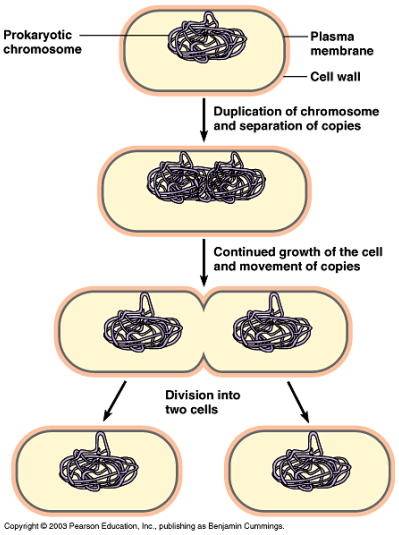
q. **soma-** = _____(*somatic*: _____ in humans)

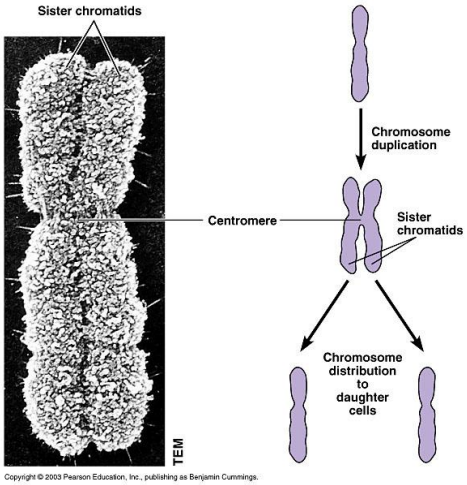
II. READING GUIDE

1. Compare the relationship between a parent and its offspring resulting from asexual versus sexual reproduction.

2. Explain the significance of Virchow's principle regarding cellular reproduction.

3. Compare the structure of prokaryotic and eukaryotic chromosomes.





Name_____

prokaryotic chromosome	eukaryotic chromosome

4. Describe the stages and significance of the cell cycle.

5. List the phases of mitosis and describe the events characteristic of each phase. Recognize the phases of mitosis from diagrams and micrographs.

6. Explain how anchorage, cell density, and growth factors control the cell cycle.

7. (a) Explain how cancerous cells are different from healthy cells; distinguish between benign and malignant tumors; and explain the strategies behind some common cancer treatments.

(b) Describe the main types of chromosomal changes. Explain why cancer is not usually inherited.

8. Distinguish between (a) somatic cells and gametes, (b) diploid cells and haploid cells, and (c) autosomes and sex chromosomes.

9. Describe key differences between mitosis and meiosis. Explain how the end result of meiosis differs from that of mitosis.

10. Explain how independent orientation, crossing over, and random fertilization contribute to genetic variation in sexually reproducing organisms.