

Name _____

Per. _____

Biology Homework Chapter 8: Heredity and Genetic Variation
Pages 183 - 209

Answer the questions with complete thoughts!

* **Sections 8.1 and 8.3: The hereditary Role of Genetic material.** Read pages 183 to 188

PART A: Define the terms in your own words.

(Section 1)

DNA _____

Heredity _____

Genes _____

Chromosomes _____

(Section 2)

Trait _____

Probability _____

Nucleotide Bases _____

P₁(parental generation) _____

(Section 3)

F₁(1st Filial) _____

F₂(2nd Filial) _____

Dominant Trait _____

Recessive Trait _____

(Section 4)

Alleles _____

Principle of Segregation _____

Genotype _____

Phenotype _____

(Section 5)

Homozygous _____

Sections 8.4 and 8.7: Patterns of Inheritance. Read pages 188 - 195

PART A: Define the terms in your own words.

(Section 1)

Dihybrid Cross _____

Principle of Independent Assortment _____

Codominance _____

Multiple Alleles _____

(Section 2)

Autosomes _____

X-Linked Traits (sex-linked traits) _____

Monosomy _____

Trisomy _____

PART B:

1. What is a *karyotype*, and **what** type of information can it help a genetic counselor determine?

2. Who was Thomas Hunt Morgan and in general what was the importance of his work?

3. Draw and Explain how **non-disjunction** during meiosis can result in an individual having an extra chromosome, (47 of them total)? Please refer to either *Trisomy 21* or *Klinefelter's Syndrome (XXY)* in your explanation. (See figure 8.14, page 194 for help)

Sections 8.8 and 8.10: Genes and Chromosomes. Read pages 196 - 199

PART A: Define the terms.

Drosophila melanogaster _____

Crossing over _____

Gene Linkage _____

Day 1: Draw and label a DNA molecule. **Day 2:** Now draw and label the same DNA molecule replicating (*s-phase*):

PART B:

1. What is the significance of Alfred Hershey and Martha Chase work in biology?

2. What did Franklin, Watson and Crick hypothesize about the structure of DNA? What are the three properties of genes that are explained by their molecular model of DNA?

PART B:

1. Define *DNA replication*.

2. Where in the cell does *DNA replication* take place?

3. Define *transcription*.

4. Where in the cell does *transcription* take place?

5. Define *translation*.

6. Where in the cell does *translation* take place?

7. What is *protein synthesis*?

8. What **two processes or steps** are involved in protein synthesis?

9. Where in the cell does protein synthesis happen, i.e., where are the amino acids assembled?

PART C:

Read, study and know pages 199 - 203. Answer questions **1 through 3** in the **CONCEPT REVIEW on page 203**. Please number your response, and answer the questions in complete intelligent thoughts.



Mutant FRUIT FLIES