SECTION
8.7 | MUTATIONS
Study Guide

KEY CONCEPT
Mutations are changes in DNA that may or may not affect phenotype.

VOCABULARY	
mutation	frameshift mutation
point mutation	mutagen

MAIN IDEA: Some mutations affect a single gene, while others affect an entire chromosome.

1. List two types of gene mutations.

_____

2. List two types of chromosomal mutations.

_____

3. Which type of mutation affects more genes, a gene mutation or a chromosomal mutation?

_____

4. What leads to gene duplication?

_____

5. What is a translocation?

_____

Below is a string of nucleotides. **(1)** Use brackets to indicate the reading frame of the nucleotide sequence. **(2)** Copy the nucleotide sequence into the first box and make a point mutation. Circle the mutation. **(3)** Copy the nucleotide sequence into the second box and make a frameshift mutation. Use brackets to indicate how the reading frame would be altered by the mutation.

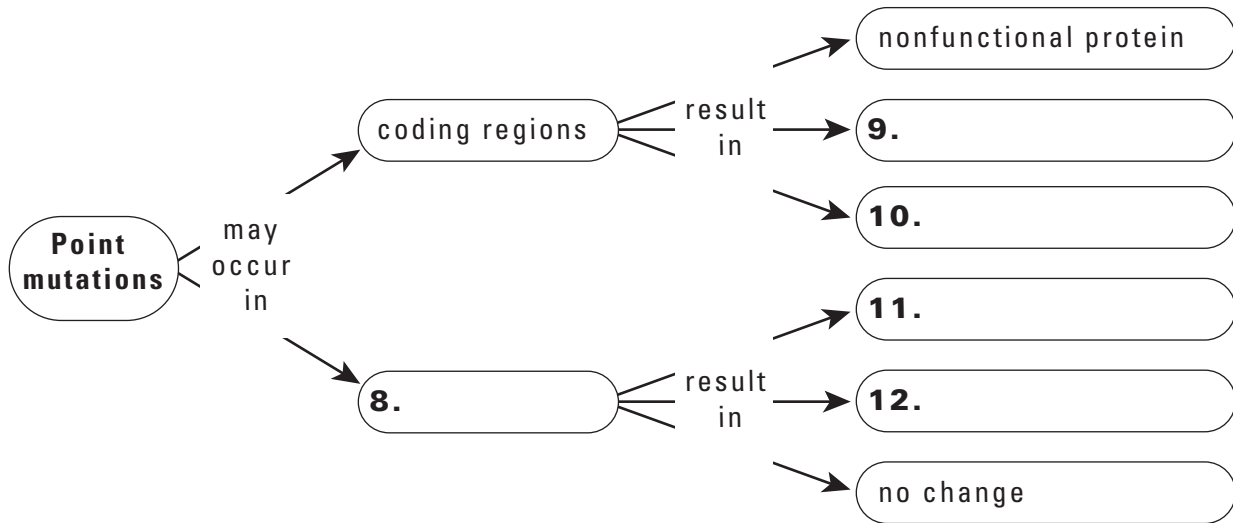| |
|---|
| A G G C G T C C A T G A |
| **6.** |
| **7.** |

CHAPTER 8
From DNA to Proteins

Section 8.7 STUDY GUIDE CONTINUED

MAIN IDEA: Mutations may or may not affect phenotype.

Fill in the cause-and-effect diagram below to explain how a point mutation may or may not affect phenotype.

13. For a mutation to be passed to offspring, in what type of cell must it occur?

MAIN IDEA: Mutations can be caused by several factors.

14. Can DNA polymerase catch and correct every replication error?

15. What is a mutagen?

16. How does UV light damage the DNA strand?

Vocabulary Check

17. What is a mutation?

18. If a nucleotide is deleted from a strand of DNA, what type of mutation has occurred?