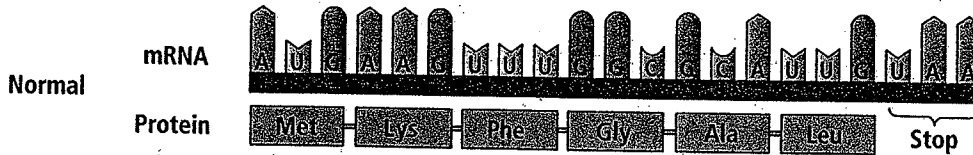


# Biology I

## Mutations

### Practice Sheet

Refer to the figure below. Respond to the following statement.



6. Record the mRNA codon sequence that would result from a substitution mutation of A instead of G in the amino acid alanine (Ala) in the above protein.

Complete the table by filling in the missing information. Use these choices:

mRNA Sequence	frameshift		substitution	
	Mutation Sequence	Type of Mutation	Mutation Sequence	Type of Mutation
7. UGU-CCG-GAA-CGA	UGC-CGG-GAA-CGA			
8. GAA-CGU-AGC-GGU	GAU-CGU-AGC-GGU			
9. UGU-UUC-CCU-UAA	UGU-UCC-CUU-AA*			

**Compare and contrast a point mutation and a frameshift mutation by defining each mutation and stating its consequence.**

Point mutation happens when	consequence:
Frameshift mutation occurs when	consequence:

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Circle the letter of the choice that best completes the statement.

1. A mutation is any mistake or change in the  
a. RNA sequence.    b. DNA sequence.    c. ribosomes.    d. nucleus.
2. A point mutation is a change in  
a. several bases in mRNA.    b. several bases in tRNA.  
c. a single base pair in DNA.    d. several base pairs in DNA.
3. A mutation in which a single base is added or deleted from DNA is called  
a. a frame shift mutation.    b. a point mutation.    c. translocation.    d. nondisjunction.
4. Chromosomal mutations are especially common in  
a. humans.    b. animals.    c. bacteria.    d. plants.
5. Few chromosome mutations are passed on to the next generation because  
a. the zygote usually dies.  
b. the mature organism is sterile.  
c. the mature organism is often incapable of producing offspring.  
d. all of the above
11. Mutations in body cells can sometimes result in  
a. new species.    b. cancer.  
c. sterile offspring.    d. hybrids.