Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Hr. \_\_\_\_

**MUTATIONS**

**1. ORIGINAL DNA:**

**TAC GGG GGC CTT ACT ACG ATC**

mRNA: \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_

Amino acid sequence (sentence):

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**2. Mutation Type - SUBSTITUTION #1:**

(*Substitute* any nucleotide other than Guanine for this example)

**TAC GGG G\_C CTT ACT ACG ATC**

mRNA: \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_

Mutated amino acid sequence (sentence):

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**3. Mutation Type - SUBSTITUTION #2:**

(*Substitute* any nucleotide other than Thymine for this example)

**TAC GGG GGC CTT ACT ACG A\_C**

mRNA: \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_

Mutated amino acid sequence (sentence):

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. Look back on #’s 2 and 3: Why does the location of the mutation matter?



5. What other or new problem arose due to the location of the mutation in #3?



**6. Mutation Type - INSERTION:**

(*Insert* any nucleotide, here… )

**TACGGGGGCCTT ACTACGATC**

mRNA: \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_

Mutated amino acid sequence (sentence):

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**7. Mutation Type - DELETION:**

(*Delete* any nucleotide below, just cross off any letter you wish and see what happens)

**TACGGGGGCCTTACTACGATC**

mRNA: \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_

Mutated amino acid sequence (sentence):

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**8. Mutation Type - INVERSION:**

(Follow the diagram of a series detaching and being inverted)

**TAC GGG GGC CTT ACT ACG ATC**

**TAC GGG GGC CTT TCA ACG ATC**

mRNA: \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_

Mutated amino acid sequence (sentence):

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

These sample mutations can also occur in combination with each other!