

4. Assume that by X-radiation a geneticist destroys and **removes the left-most base pair of the DNA molecule** on Figure A. To discover the effect of the kind of mutation, construct the new mRNA chain indicated by the remaining letters, starting at the new base on the left.

New mRNA chain

5.

A) Again using the chart, construct the chain of amino acids specified by the complete codons of the new mRNA

New Amino Acid chain

B) What has happened to the codon on the right end? _____

The codon that does not appear in the chart specifies arginine. Thus, a single amino acid can be specified by more than 1 codon.

C) Does the deletion in the DNA molecule change the resulting protein? _____
if so in what way?

One codon (uga) in the altered mRNA does not specify an amino acid. Codons of this sort specify the ends of protein molecules.

6. Assume that X-radiation deleted the 1st three base pairs on the left instead of just the 1st one. Would this kind of deletion have more or less effect on an amino acid sequence than deletion of a single base pair? Explain.

