**Concept Check**

**Assignment Outcomes:**

* Review practical applications of the Central Dogma (i.e., flow of genetic information from DNA 🡪 RNA 🡪 protein via processes of transcription and translation) given nucleotide sequences.
* Evaluate nucleotide sequences to identify specific mutations.

1. Fill in each blank with the appropriate mutated mRNA codon or amino acid. Lastly, determine what specific type of mutation has occurred.

|  |  |  |
| --- | --- | --- |
|  | Normal | Mutated |
| DNA Nucleotide Base Triplet | GTT | GTC |
| mRNA Codon | CAA |  |
| Amino Acid | Gln |  |

This is an example of a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** mutation.

1. Fill in each blank with the appropriate mutated DNA triplet or amino acid. Lastly, determine what specific type of mutation has occurred.

|  |  |  |
| --- | --- | --- |
|  | Normal | Mutated |
| DNA Nucleotide Base Triplet | GTT |  |
| mRNA Codon | CAA | CCA |
| Amino Acid | Gln |  |

This is an example of a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** mutation.

1. Fill in each blank with the appropriate mutated mRNA codon or amino acid. Lastly, determine what specific type of mutation has occurred.

|  |  |  |
| --- | --- | --- |
|  | Normal | Mutated |
| DNA Nucleotide Base Triplet | GTT | ATT |
| mRNA Codon | CAA |  |
| Amino Acid | Gln |  |

This is an example of a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** mutation.

1. Fill in each blank with the appropriate mutated mRNA or amino acid sequence. Lastly, determine what specific type of mutation has occurred.

|  |  |  |
| --- | --- | --- |
|  | Normal | Mutated |
| DNA Nucleotide Base Seq. | TGA GGA CTC CTC | TGA GGA CAC CTC |
| mRNA Seq. | ACU CCU GAG GAG |  |
| Amino Acid Seq. | Thr—Pro—Glu—Glu |  |

This is an example of a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** mutation.

1. Fill in each blank with the appropriate mutated mRNA or amino acid sequence. Lastly, determine what specific type of mutation has occurred.

|  |  |  |
| --- | --- | --- |
|  | Normal | Mutated |
| DNA Nucleotide Base Seq. | AAA ATA CGT GCA | AAG ATA CGT GCA |
| mRNA Seq. | UUU UAU GCA CGU |  |
| Amino Acid Seq. | Phe—Tyr—Ala—Arg |  |

This is an example of a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** mutation.

1. Fill in each blank with the appropriate mutated mRNA or amino acid sequence. Lastly, determine what specific type of mutation has occurred.

|  |  |  |
| --- | --- | --- |
|  | Normal | Mutated |
| DNA Nucleotide Base Seq. | AAA ATA CGT GCA | AAA ATA CCT GCA |
| mRNA Seq. | UUU UAU GCA CGU |  |
| Amino Acid Seq. | Phe—Tyr—Ala—Arg |  |

This is an example of a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**mutation.

1. Fill in each blank with the appropriate mutated mRNA or amino acid sequence. Lastly, determine what specific type of mutation has occurred.

|  |  |  |
| --- | --- | --- |
| DNA Nucleotide Base Seq. | AAA ATA CGT GCA | AAA ATT CGT GCA |
| mRNA Seq. | UUU UAU GCA CGU |  |
| Amino Acid Seq. | Phe—Tyr—Ala—Arg |  |

This is an example of a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** mutation.

1. Fill in each blank with the appropriate mutated mRNA or amino acid sequence. Lastly, determine what specific type of mutation has occurred.

|  |  |  |
| --- | --- | --- |
|  | Normal | Mutated |
| DNA Nucleotide Base Seq. | AAA ATA CGT GCA | AAA TAT ACG TGC A |
| mRNA Seq. | UUU UAU GCA CGU |  |
| Amino Acid Seq. | Phe—Tyr—Ala—Arg |  |

This is an example of a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** mutation.