

Answers to Assigned Odd-Numbered Text Problems for Section 6

10.11 With a G at the 5' end, the sequence reading frame is GUU UUU ... and the first amino acid is valine; with a G at the 3' end, the reading frame is ... UUU UUG and the last amino acid is leucine.

10.25 The “non-template strand” obviously refers to the sense strand, which has the same sequence as the mRNA.

- a. The wild type reading frame (written as mRNA) is then AUG CAU CCG GGC UCA UUA GUC U... which codes for Met His Pro Gly Ser Leu Val ...
- b. The mutant X reading frame is AUG GCA UCC GGG CUC AUU AGU CU... which codes for Met Ala Ser Gly Leu Ile Ser Leu
- c. The mutant Y reading frame is AUG CAU CCG GGC UCU UAG UCU which codes for Met His Pro Gly Ser; UAG is a termination codon.
- d. The double mutant reading frame is AUG GCA UCC GGG CUC UUA GUC U... which codes for Met Ala Ser Gly Leu Leu Val

10.27 Seven introns. Each loop is an intron in the DNA, and these introns are not present in the mRNA so the intron in the DNA has nothing in the mRNA to pair with and forms a loop.