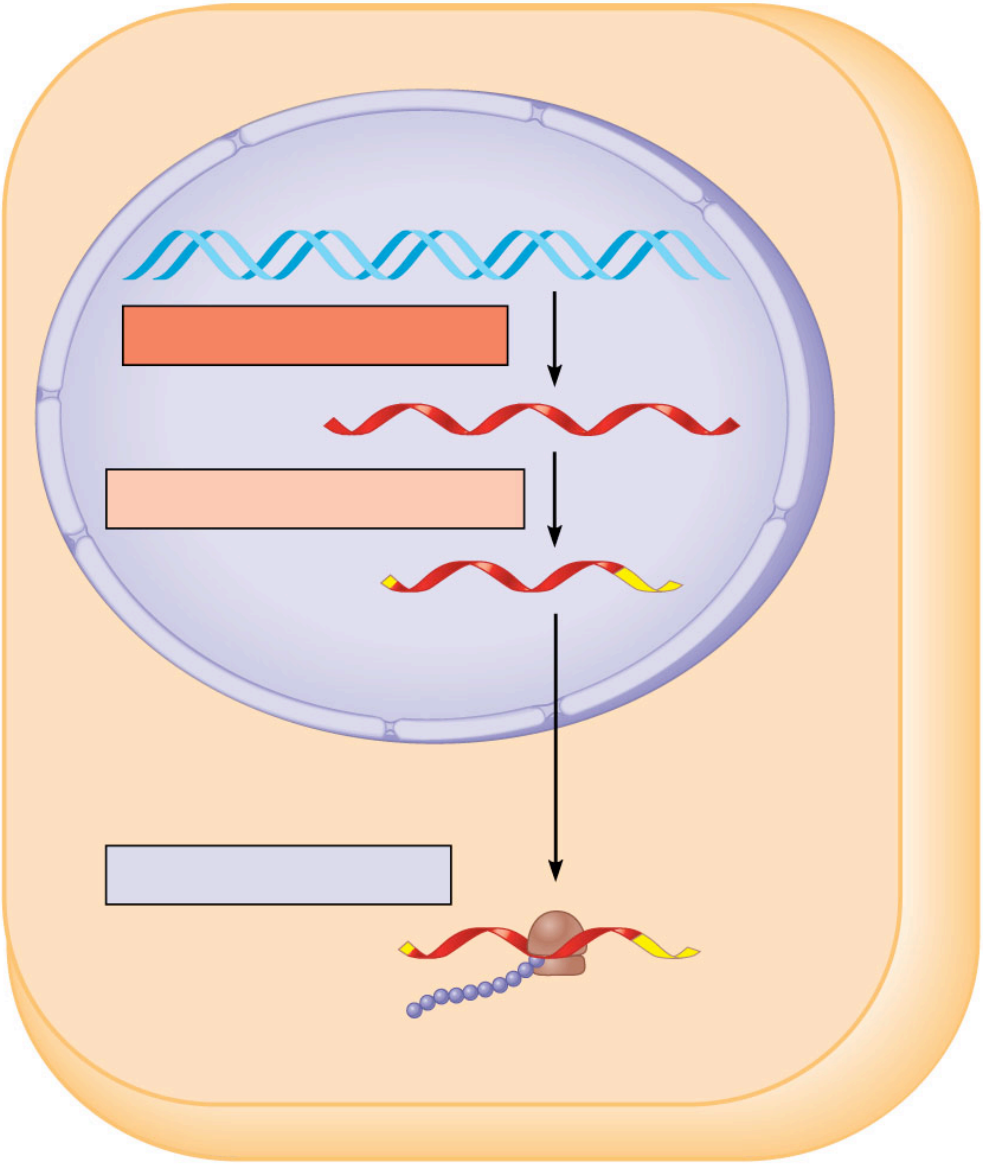

Second mRNA base

First mRNA base (5′ end of codon)	U	C	A	G	Third mRNA base (3′ end of codon)
U	UUU Phe	UCU Ser	UAU Tyr	UGU Cys	U
	UUC Phe	UCC Ser	UAC Tyr	UGC Cys	C
	UUA Leu	UCA Ser	UAA Stop	UGA Stop	A
	UUG Leu	UCG Ser	UAG Stop	UGG Trp	G
C	CUU Leu	CCU Pro	CAU His	CGU Arg	U
	CUC Leu	CCC Pro	CAC His	CGC Arg	C
	CUA Leu	CCA Pro	CAA Gln	CGA Arg	A
	CUG Leu	CCG Pro	CAG Gln	CGG Arg	G
A	AUU Ile	ACU Thr	AAU Asn	AGU Ser	U
	AUC Ile	ACC Thr	AAC Asn	AGC Ser	C
	AUA Ile	ACA Thr	AAA Lys	AGA Arg	A
	AUG Met or start	ACG Thr	AAG Lys	AGG Arg	G
G	GUU Val	GCU Ala	GAU Asp	GGU Gly	U
	GUC Val	GCC Ala	GAC Asp	GGC Gly	C
	GUA Val	GCA Ala	GAA Glu	GGA Gly	A
	GUG Val	GCG Ala	GAG Glu	GGG Gly	G

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mRNA for “mature” beef insulin

UUUGUCAAUCAGCAUCUGUGUGGGAGUCACCUAGUCCAGGCCCUAUAUUUGGUUUGCGGCGAGA
GAGGGUUCUUUUACGACCCCAAAGCAGGUAUUGUGGAACAGUGUUGUCGUUCUGUUUGUUCGUU
GUACCAAUUGGAGAAUUAUUGUAACUAG

UUUGUCAAUCAGCAUCUGUGUGGG

AGUCACCUAGUCCAGGCCCUAUAU

UUGGUUUGCGGCGAGAGAGGGUUC

UUUUACGACCCCAAAGCAGGUAUU

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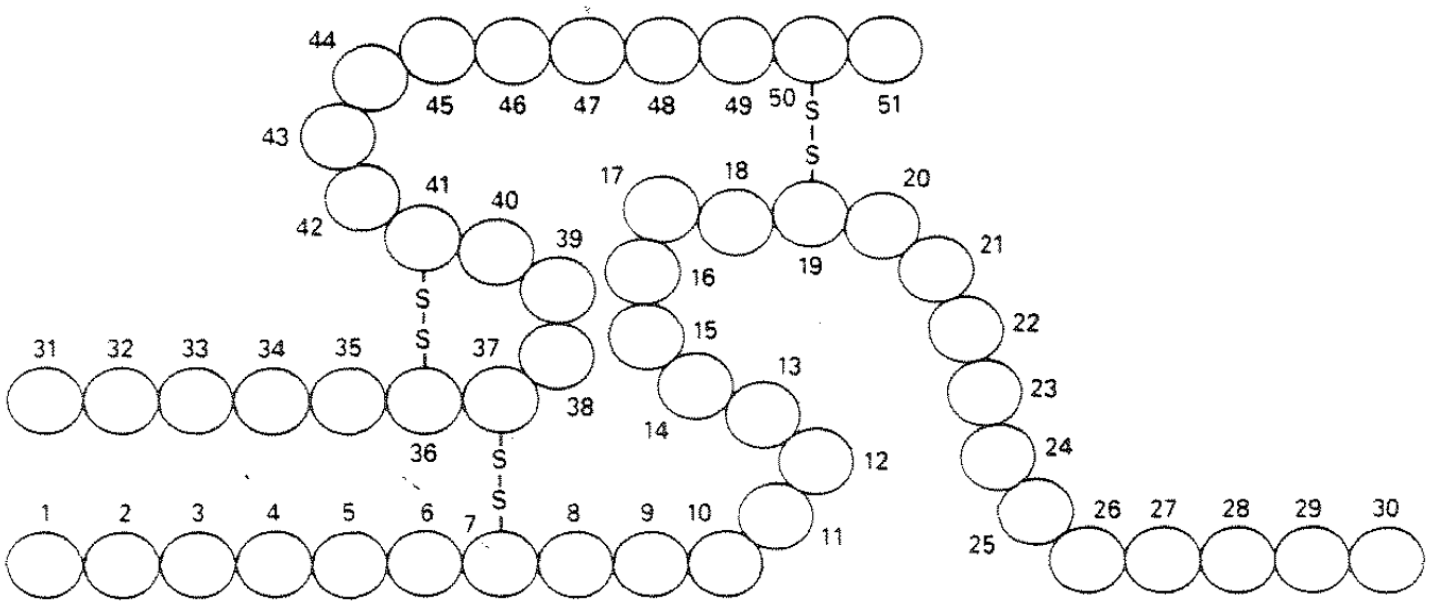
UAUUGUAACUAG



Instructions:

1. Begin by writing out the mRNA sequence for each piece of DNA.
2. Find the start codon (AUG) on each mRNA and divide the remaining bases into codons.
3. Use the codon conversion table to determine the amino acid sequence of the protein.
4. Stop translating when you reach one of the stop codons, even if there's more sequence left over!

	3'-GGTCGTGTGTGGTGCCTACGGGTTTCGTTACATTGCAT-5'
mRNA:	5' 3'
protein:	

	3'-TACTGGTCCGCAATCGCTCAGACGTACTGCCATGCACT-5'
mRNA:	5' 3'
protein:	

	3'-GGGGTACTGACTGTGCATGCTAGCTAGCGTACGTATTT-5'
mRNA:	5' 3'
protein:	

	3'-TTACTAACTACGCATCTGCGTCCGCTGCCTCTATTGCT-5'
mRNA:	5' 3'
protein:	

	3'-TGCTAGCTAGCTAGCTAGCTAGTAGCTGTGCTGCATTC-5'
mRNA:	5' 3'
protein:	

	3'-TGACTGCACGTAGCTGCTACTCGCATCACTGTCAGACT-5'
mRNA:	5' 3'
protein:	