

Protein Synthesis – Understanding the Diagrams

Directions: Use your understanding of the process of protein synthesis and the diagrams [D1 through D7] below to complete the questions; some parts of the image are missing or incomplete. This activity should help you to understand any diagram that you may encounter on a future test(s).

Diagram 1

[Word bank: transcription, mRNA nucleotide , RNA polymerase, DNA nucleotide]

1. What is "X"?
2. What is "Y"?
3. The diagram represents what process?

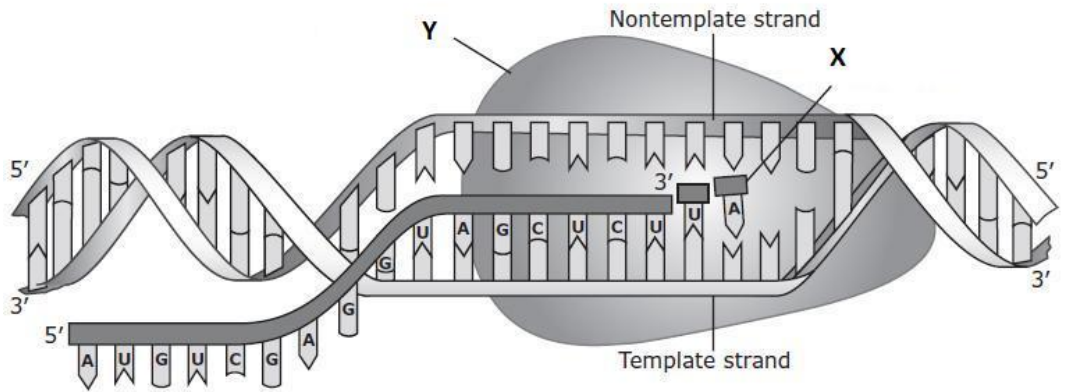


Diagram 2 [Word bank: mRNA, tRNA, transcription]

4. This process shown in section "X" is known as _____.
 5. What is "Y"?
 6. What is "Z"?
- How do you know?

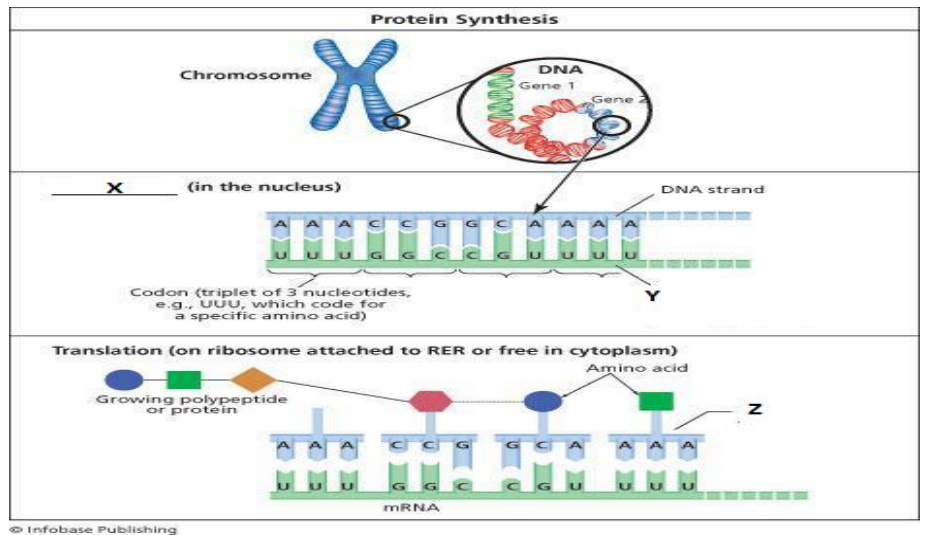
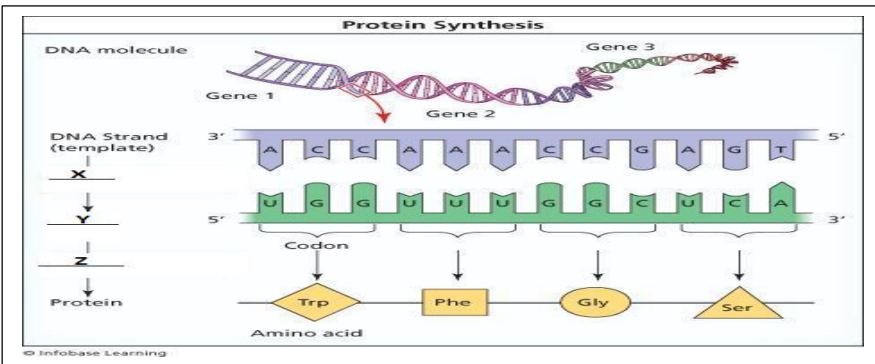


Diagram 3 [Word bank: mRNA, translation, transcription]



7. This process shown in section "X" is known as _____.
8. What is "Y"?
9. This process shown in section "Z" is known as _____.

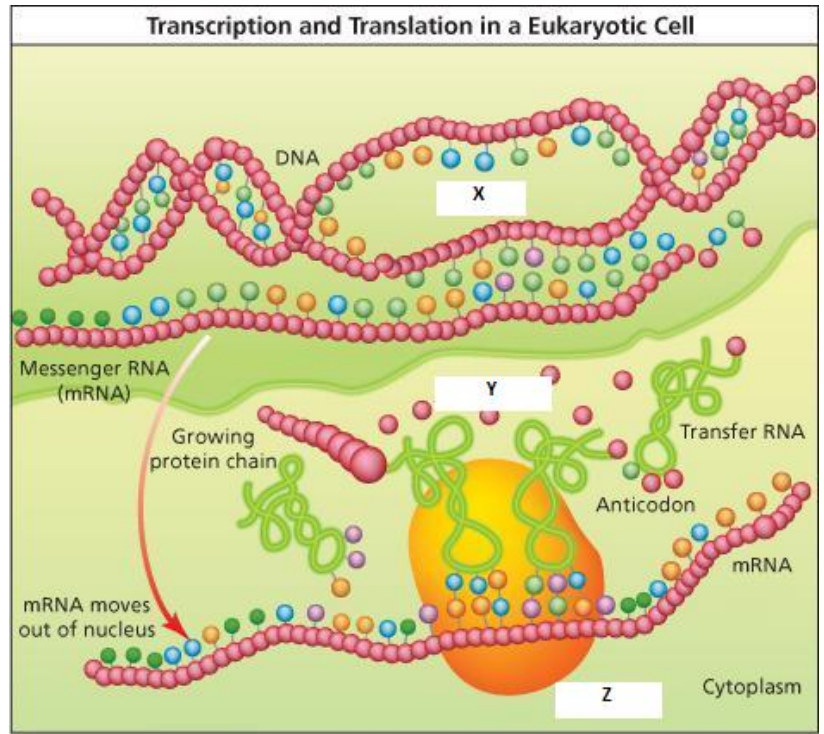
Diagram 4 [Word bank: ribosome, nucleus, amino acids]

10. This process shown in section "X" occurs in the _____.

11. What does "Y" represent?

12. What organelle is "Z"? _____

How do you know?



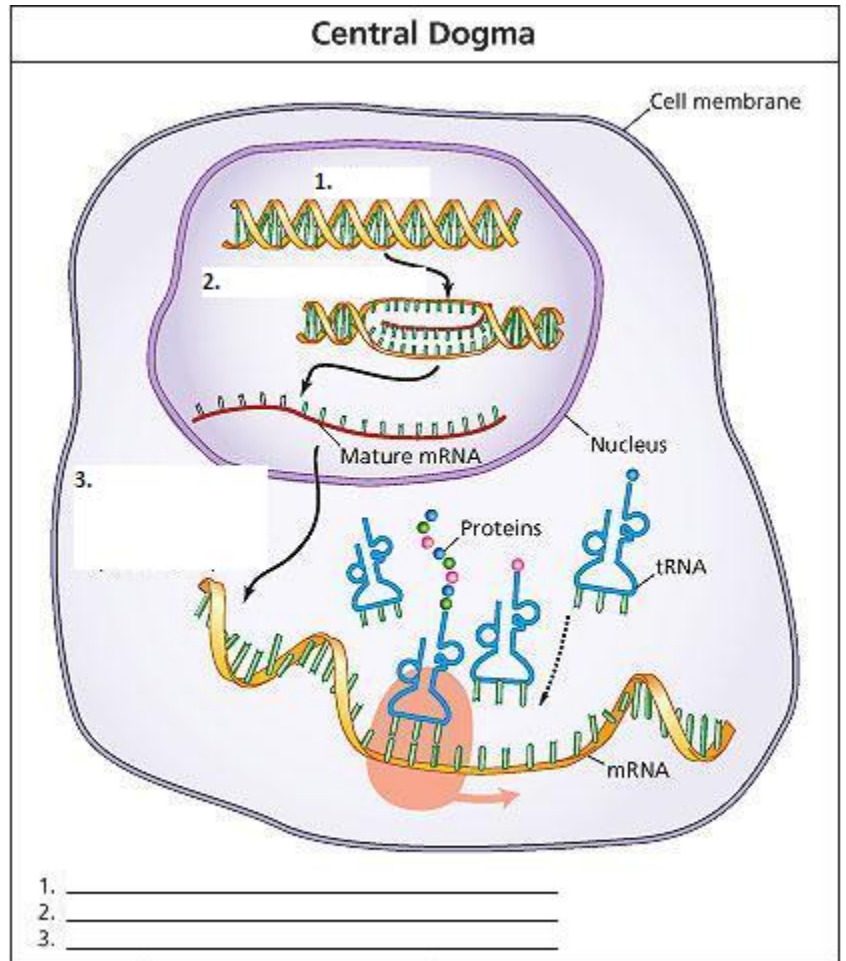
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Diagram 5 [Word bank: translation, RNA, DNA, amino acids, proteins, transcription]

13. Explain the component of the central dogma shown in 1.

14. Explain the component of the central dogma shown in 2.

15. Explain the process of the central dogma shown in 3.



1. _____
2. _____
3. _____

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Diagram 6 [Word bank: translation, nucleus, amino acids, transcription]

Summary of protein synthesis

16. This process shown in section "X" is known as _____.

17. Where does this occur in the cell?

18. What does "Z" represent?
_____ How do you know?

19. This process shown in section "Y" is known as _____.

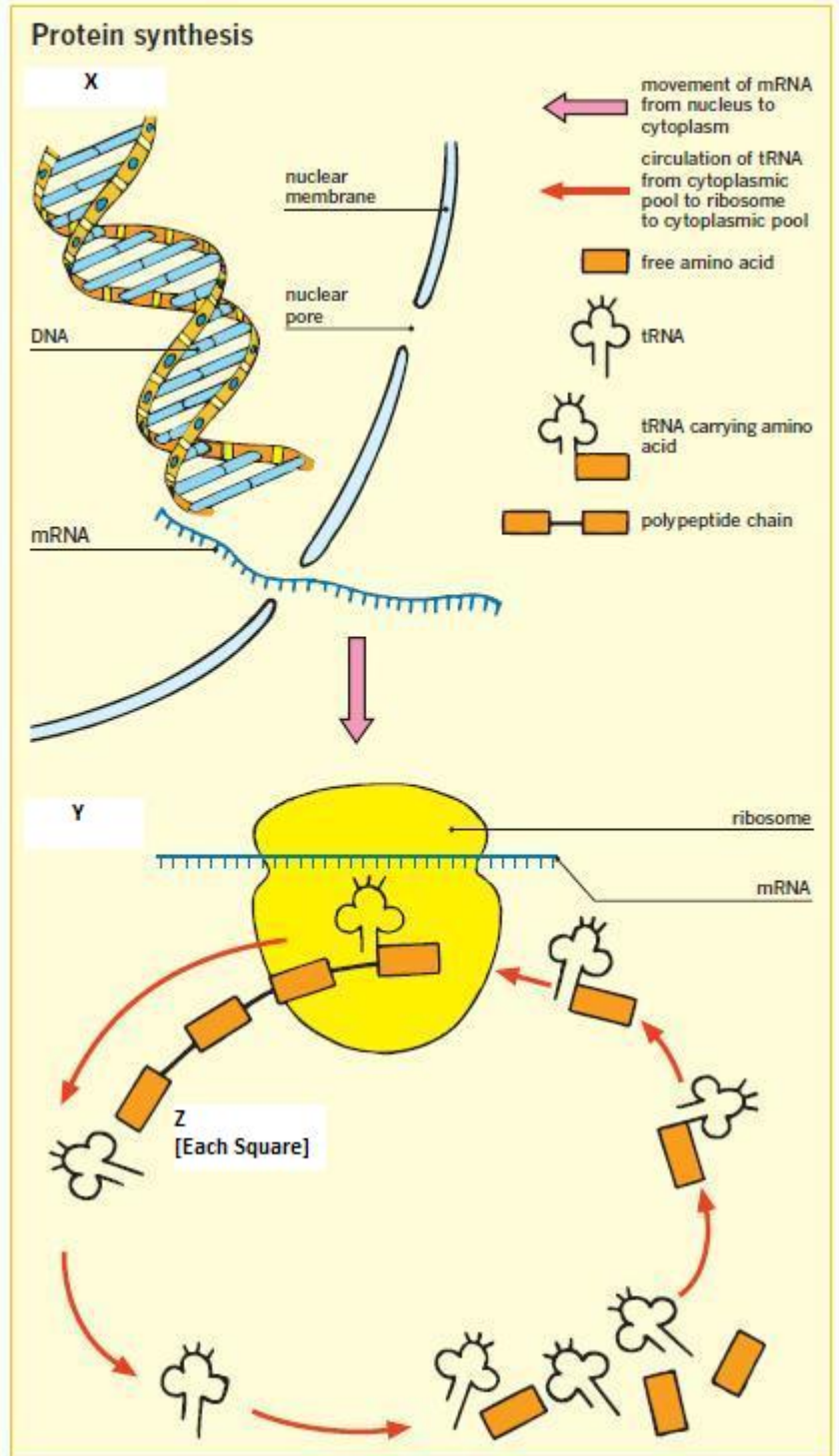
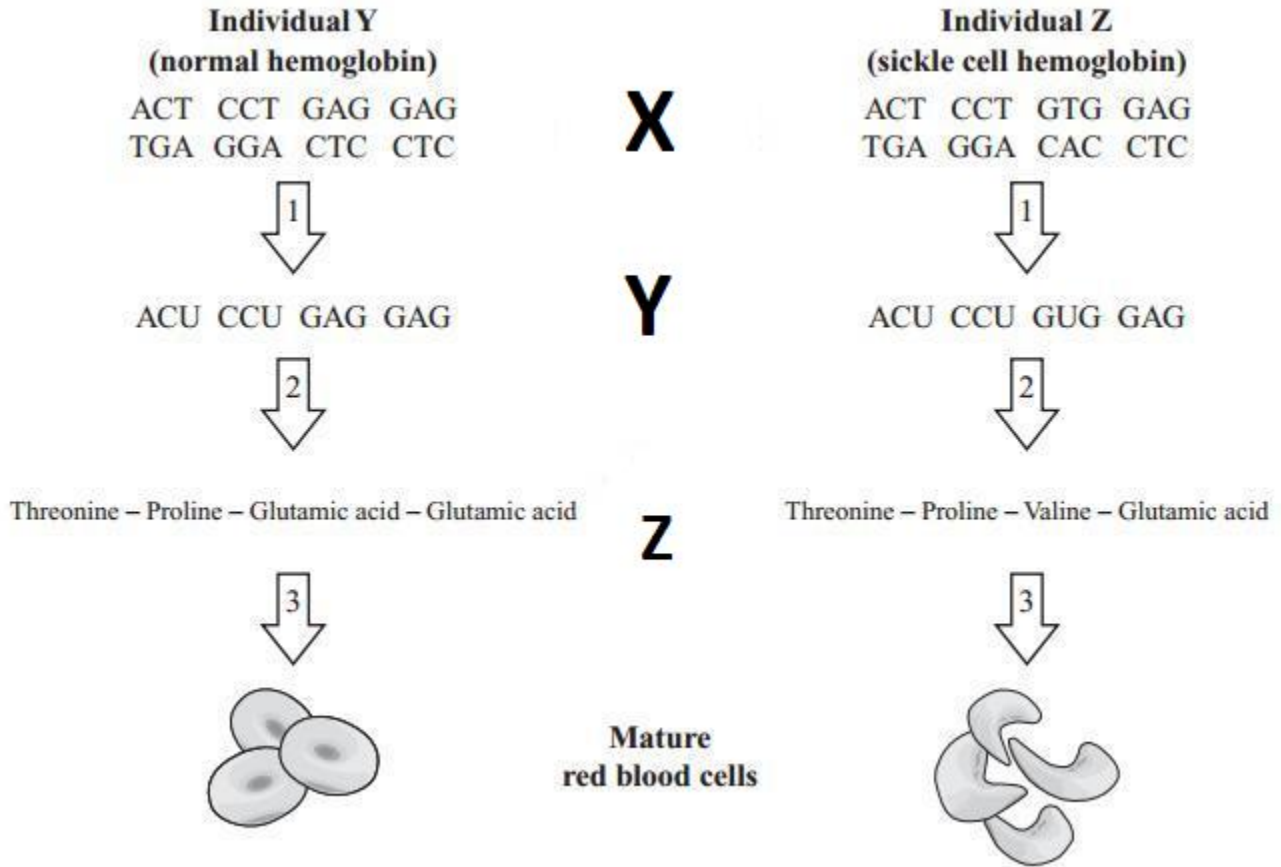


Diagram 7 [Word bank: translation, DNA, mRNA, transcription, amino acids]



20. What is "X" _____
21. What is "Y"? _____ How do you know the difference between the two?
22. This process shown between section "X" and section "Y" is known as _____.
23. What does "Z" represent? _____
24. This process shown between section "Y" and section "Z" is known as _____.
25. This activity should have helped you to understand the various diagrams for transcription and translation. Did it? Explain.

Citations

- Central Dogma." [Diagram 5] *Science Online*. Facts On File, Inc. Web. 18 Nov. 2013.
- Diagram - Question 11" [Diagram 1] Digital image. *EOC Assessments*. Texas Education Agency, n.d. Web. 18 Nov. 2013.
- Diagram - Question 8" [Diagram 7] Digital image. *Massachusetts Comprehensive Assessment System*. Massachusetts Department of Elementary and Secondary Education, n.d. Web. 18 Nov. 2013.
- "Protein Synthesis." [Diagram 2] *Science Online*. Facts On File, Inc. Web. 18 Nov. 2013.
- "Protein Synthesis." [Diagram 3] *Science Online*. Facts On File, Inc. Web. 18 Nov. 2013.
- "Summary of Protein Synthesis." [Diagram 6] *Science Online*. Facts On File, Inc. Web. 18 Nov.
- "Transcription and Translation in a Eukaryotic Cell." [Diagram 4] *Science Online*. Facts On File, Inc. Web. 18 Nov. 2013.