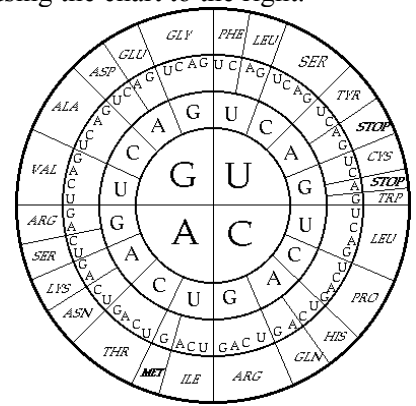


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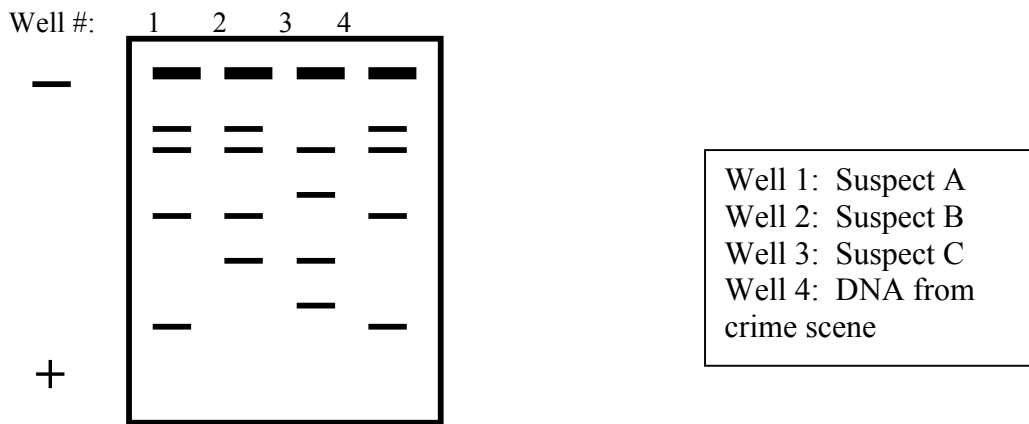
## DNA review

1. What is a nucleotide?
2. What are the bases found in DNA? RNA?
3. The main enzyme involved in linking individual nucleotides into DNA molecules is called:
4. The process by which the genetic code of DNA is copied into a strand of RNA is called?
5. In messenger RNA, each codon specifies a particular \_\_\_\_\_.
6. Give the complimentary strand for the following: TACGCAATCCCTTAACT
7. What would be the mRNA strand for TACGCAATCCCTTAACT?
8. Translate the mRNA strand from the question #7 into the amino acid chain, using the chart to the right.



9. Describe the main differences between RNA and DNA.
10. What is a mutation?
11. During replication, what would be the sequence of nucleotides that would bond with the DNA sequence TATGA?
12. Why are sex-linked disorders more common in males than females?
13. How does nondisjunction cause chromosome number disorders?
14. A normal human diploid zygote contains a full set of \_\_\_\_\_ chromosomes.
15. A chart that traces the inheritance of a trait in a family is called a \_\_\_\_\_. How can you tell the gender of someone on it? How can you tell the genotype of someone on it?
16. What is gel electrophoresis? Give examples where it might be used.

17.



Using the above results of gel electrophoresis, where Well 1, 2, and 3, are DNA from criminal suspects, and Wells 4 is a DNA sample from the crime scene, determine which suspect left their DNA at the crime scene.

- a. Suspect A
- b. Suspect B
- c. Suspect C
- d. none of the above

17. Traits that are caused by the interaction of many genes are said to be \_\_\_\_\_.

18. An example of a trait that is determined by multiple alleles is: a) Huntington's disease b) ABO blood groups  
c) Down syndrome d) hemophilia

19. Where are most sex-linked genes found? Why?

20. What is hemophilia? How is it inherited?

21. What genotype would a female need to be in order to be colorblind? If you find a colorblind female, what can you tell about her parents' genotypes?

22. How is a karyotype prepared? What does it look like at the start? What does it look like when it is finished?

23. Sickle-cell anemia, and Tay-Sachs disease are typical of recessive disorders concentrated in \_\_\_\_\_.

- a) ethnic groups b) families with a single child c) countries with tropical climates d) countries with mild climates

24. Which of the following genetic disorders can be detected by karyotyping?

- a) Down Syndrome and Turner Syndrome b) Tay-Sachs disease and PKU c) Hemophilia and Cystic Fibrosis d) Klinefelter Syndrome and Sickle-cell anemia