

Extra Practice of Chargaff's Rule and Complimentary Base Pairing

Name: _____

Date: _____

1. What is Chargaff's Rule?
2. How do the nitrogenous bases pair?
____ pairs with ____
____ pairs with ____
3. If a strand of DNA has 20% C, what percent will be G? _____
4. If a strand of DNA has 35% A, what percent will be T? _____
5. If a strand of DNA has 10% G, what percent will be T? _____
6. If a strand of DNA has 45% A, what percent will be C? _____
7. If a strand of DNA has 24% T, what percent will be G? _____
8. Write the complimentary base pairs for the following DNA strands:

Original: ATC GCC CAT GTG CCA
Comp:

Original: TGA CAA CGA GGT ACT
Comp:

Original: AAA CCC TTT GGG ACG
Comp:

Extra Credit:

You have decided you want to see what you have in common with other species as far as your DNA goes. You were able to sequence the DNA in *E.coli*, a mouse, and your big brother's girlfriend (a human). Using Chargaff's rule, discover which two organisms have the most DNA in common.

Below is a chart of the different bases each organism has. Along the top of the chart, you will find the base pair and the numbers underneath represent the percentages of those found in the organisms.

Organism	Adenine (A)	Thymine (T)	Guanine (G)	Cytosine (C)
<i>Escherichia coli</i>	26.0	23.9	24.9	25.2
Mouse	29.2	29.4	21.7	19.7
Human	30.7	31.2	19.3	18.8

1. Which 2 organisms are most similar? Why do you think this? Please explain your answer using Chargaff's complimentary base pair rule.