

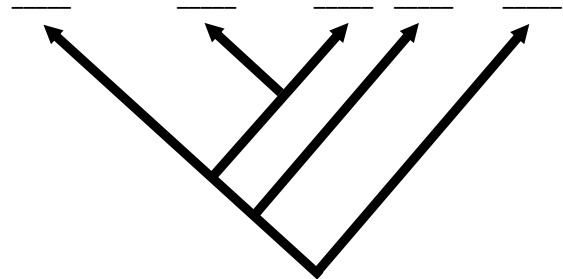
Name _____ Date _____ Period _____

HONORS BIOLOGY – PROBLEM SET

CHAPTERS 13 & 14: EVOLUTION & THE ORIGIN OF SPECIES

1. Fill in the phylogenetic chart based on the following data. The numbers refer to differences in DNA samples of five species. Lower numbers imply close relationships. [2 points]

	A	B	C	D	E
A	--	2	6	8	18
B	2	--	6	8	18
C	6	6	--	10	12
D	8	8	10	--	22
E	18	18	12	22	--



HINT: Which species (letter) goes on which line?

2. In the human population, brown eyes (B) is dominant to blue eyes (b). Out of 600 individuals, only 42 have blue eyes. [4 points]
- State the 5 requirements for Hardy-Weinberg equilibrium.
 - Determine the percent of people who are BB, Bb, and bb.
 - Calculate "p" and "q".
 - Is this population undergoing microevolution? How do you know?
3. According to Charles Darwin, which of these two people would be more "successful at life"? Explain your reasoning! [1 point]

SALLY: Sally is a 43 year-old woman with no children. She spends many hours volunteering at the local soup kitchen. She also has millions in her bank account and donates hundreds of thousands of dollars to children's organizations.

KELLY: Kelly is a 19 year-old woman with 4 children, ages 5, 3, 1½, and 2 months. She does not have a job, and was not able to complete high school. She is about to get evicted from her 1 bedroom apartment.

4. For many years, people have over-relied on antibiotics. As a result of taking too much medication and using too much hand sanitizer, bacteria are becoming resistant. Use Darwin's 5 steps to explain how this process occurred. Make sure you also include a definition of each step! [2 points]
5. Which of these animals is NOT considered a species? Explain why! [1 point]
Choose between **horse**, **mule**, and **donkey**.