

Name:

ANT 3514 – Introduction to Biological Anthropology
Mendelian Genetics
Lab 5, Week of 9/22/03

Question 1:

Name the three chemical components that make up DNA?

Question 2:

What two steps are involved in the formation of a protein?

Question 3:

Having one's earlobe attached is a recessive trait (e), while a free earlobe is dominant (E). The ability to roll your tongue is a dominant trait (T), while an inability to do this is recessive (t). Construct a punnett square for a mating between individuals with genotypes:

Female = Ee tt Male: Ee Tt

		Female		
		Et		
Male	ET			

Write out each **genotype** (ex. EE TT) and the **ratio** of offspring possessing each. Then write out each **phenotype** (ex. Attached earlobe & tongue roller) and the **ratio** of individuals having each.

Question 4:

Two black mice were mated over several years and produced 29 black and 9 white offspring. Explain these results by giving the genotypes of the parents and offspring.

Question 5:

What is 'phenotype' and how is it determined?

Name:

Question 6:

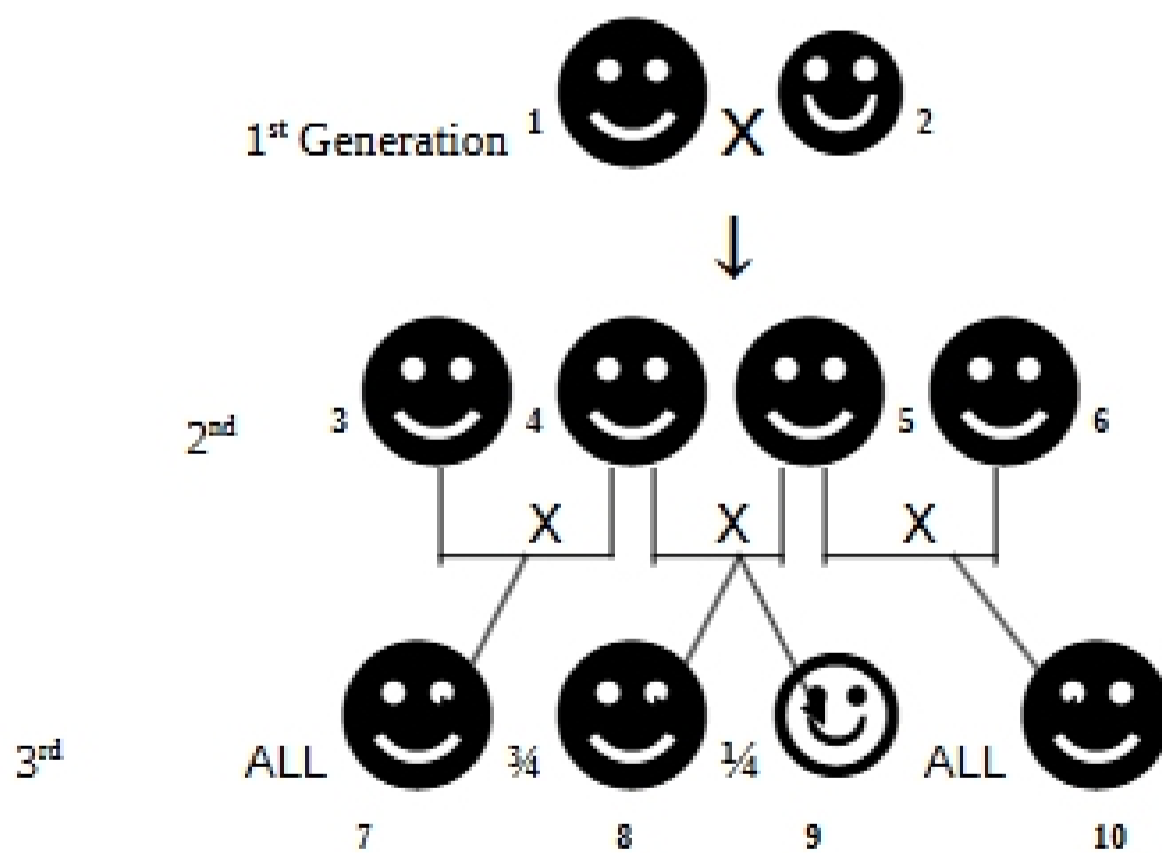
Prize breeding cattle are black and tan. Farmer Bob purchased a superb black and tan bull for \$250,000. The progeny sired by this bull were all normal in appearance. However, when these progeny were interbred white-speckled calves were produced at a frequency of 25%. Why did the farmer remove this bull from his breeding population and ask for his money back?

Question 7:

Name and describe Mendel's two principles.

Question 8:

This diagram is a pedigree showing phenotype in three breeding generations. The notation in the 3rd generation denotes the number of offspring produced that have the phenotype shown. In the adjacent box fill in the genotype for each individual based on their phenotype and the phenotype of their relatives (e.g., AA). Make sure you take dominance into account. Use: **A=Dominant** & **a=Recessive**



Genotypes for Individuals	
1. _____	2. _____
3. _____	4. _____
5. _____	6. _____
7. _____	8. _____
9. _____	10. _____