### Thought Questions

Write a brief paragraph to answer each question. Include specific examples and definitions whenever possible.


2. Could evolution occur without mutation? Why or why not?
3. Explain “balanced polymorphism” using sickle cell as your example.

4. Make a table comparing and contrasting gene flow and genetic drift. Consider what they have in common (compare) and how they are different (contrast). Consider geographic isolation, population size, and effects on variation.
   - Provide an example in humans for gene flow and one for genetic drift.
   - Provide an example in lemurs for gene flow and one for genetic drift.

5. Do the same as #5, but for assortative mating and sexual selection. Consider the roles of competition and group membership as well as which species can have these processes. Provide examples.

6. If allele $B$ has a frequency of 0.70 and allele $b$ has a frequency of 0.30, then what is the frequency of the heterozygote?

7. T/F and Why? If $P = 0.4$, then $Q = 0.16$

8. T/F and Why? If $P^2 = 0.04$, then $P = .2$

9. T/F and Why? If a population is in Hardy-Weinberg equilibrium, then genetic drift is occurring.

Review math facts using the Khan Academy links provided on the study guides web page. No calculators on quizzes or exams! Rebuild your dendrites!

Use the other links (Khan Academy, Crash Course, TED talk) on the study guides web page to reinforce your dendrites about the Hardy-Weinberg law of equilibrium.