Biol 570   **Lab #10 Worksheet**

Name: _____   **Sorting Number: _____**

Lab Day: _____   Lab Time: _____

Fill in the worksheet as you go through the steps and submit it to your TA at the end of class.

Part 1: Distinguishing between paired and unpaired design.

Practice Problem #1 – Territorial displays in pikas.

Question 1. Is the hypothesis test paired or unpaired?   _____

Question 2. Is there a flaw in this experimental design?

Practice Problem #2 – Bill length in dusky flycatchers.

Question 3. Is the hypothesis test paired or unpaired?   _____

Practice Problem #3 – Effects of monitoring on foraging.

Question 4. Is the hypothesis test paired or unpaired?   _____

Practice Problem #4 – Effects of fertilizer on tomatoes.

Question 5. Is the hypothesis test paired or unpaired?   _____

Part 2: Snail-eating snakes.

Question 6. What are the appropriate null and alternative hypotheses for our question about asymmetry in snail-eating snakes?

H_0:

H_A:

Question 7. Based on our null hypothesis, what is the most appropriate test to perform?

_____

Question 8. Use the summary statistics from Minitab to calculate a t-statistic by hand:

$$t = \frac{\overline{Y} - \mu_0}{\frac{s}{\sqrt{n}}}$$

Question 9. What is the P-value reported by Minitab?   *P*-value = _____

Question 10. What should we conclude from this study?

Question 11.

Using the data from 12 species, we estimated the mean excess of teeth in the right jaw compared to the left jaw for snail-eating snakes. We are 95% confident that this means corresponds to at least _____ more teeth on the right jaw than the left, but not more than _____ more teeth on the right jaw than the left.