Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Pre-lab Lab 8

Week 9

ENS 495 Design & Analysis

1)What does “ANOVA” stand for? (3 words): \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2)What does “lm” stand for (eg, what does the R function lm() stand for? (Hint: its 2 words): \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_

When I do ANOVA in R I typically run code like this to make two separate models:

**anova.null <- lm(y ~ 1, data = df.3pops)**

**anova.alt <- lm(y ~ population, data = df.3pops )**

3)What does the 1st model, **anova.null**, represent? (can be answered in as few as 2 word): \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_

4)What does the 2nd model, **anova.alt**, represent (can be answered in as few as 2 word): \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_

Say I study 20 populations of garlic mustard (GM) from different counties around Pennsylvania. I compare how much of the allelopathic anti-fungal chemical AITC each population produces to AITC production by plants from Trillium Trail, near Pittsburgh. I therefore run 20 separate t-tests and have 20 different p-valeus.

5)What kind of t-test would I use: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6)Even if there is no genetic variation in AITC production and no environmental impact on AITIC production between populations, how many times would I expect p < 0.05?: \_\_\_\_\_\_\_\_\_

7)What phrase describes this problem? The \_\_\_\_\_\_\_\_\_\_\_\_\_ of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8) Each time I get p < 0.05 in this situation, what type of error has occurred?

\_\_\_\_\_\_ \_\_\_\_\_ error.