Name _____   Stats Café Final Exam

Essays. Please complete numbers 1 and 2, and complete 4 of the remaining 6:

1) Please explain the theoretical underpinnings of an ANOVA. Please include a discussion about what

one assumes (and why) in order for the theory to hold, exactly what the ANOVA assess, and what it

reveals about the data.

2) Please explain the importance of the "distribution" (all, not just the normal) in statistics, what

information it provides, and the relationship between the z, t, and F, distributions.

3) Why do we do statistics, and what are the advantages of statistics over "eyeballing" the data?

4) Please explain what power is, why it is important to assess it, and ways to increase one's power.

5) Please describe and explain the relationships between Type I errors, Type II errors, the null hypothesis,

and family wise error rates.

6) Please discuss the differences and relationships between prediction, explanation, and when it is

appropriate to conclude that a causal relationship exists.

7) Please compare and contrast a regression and an ANOVA.

8) When making conclusions about a set of data, what descriptive statistics are essential and why?