VINES STREET – QUESTIONS

Assume that you are Aimee Novak and you have been asked to elaborate on the memo in Exhibit 1 to address the issues raised by Bruce Morgan in both of his conversations with you. Use the report form from the course website and please be certain to address all of the following issues:

Q. 1. What conditions would justify the assumption of a constant contribution margin per customer? Do you think those conditions are likely to hold here? To support your conclusions, do a scatter plot of the sample data, and then use the sample data to run a regression of purchase costs (dependent variable) on purchase revenues (independent variable). [Hint: What is the meaning of the intercept term of your regression results?]

Q. 2. Is there good reason to believe that evening customers purchase, on average, more than day customers? Support your answer by performing a statistical test on the difference between the mean day purchase and the mean evening purchase (using a two-tail test).

Q. 3. Is Aimee using marginal cost and marginal revenue correctly in her analysis? Explain the errors in her analysis, if any. [Hint: Think about Bruce Morgan’s questions.]

Q. 4. What closing time should Vines Street choose to maximize profits? Calculate the increase in profits (relative to the current closing time of 10pm) that would result from extending store hours to 4am. If you recommend a different closing time, calculate the increase in profits (again relative to the current closing time) that would result from your recommendation.

Q. 5. a. Calculate the breakeven number of additional customers for each added hour of operation up to 4am.

 b. Calculate the breakeven number of additional customers for an entire year, assuming (i) a closing time of 4am and then (ii) your recommended closing time, if it differs from 4am.

 c. Find the safety margin on new customers for the year. [Hint: For the per-year analysis, remember to account for the cost of the security upgrade. Use straight- line depreciation as a measure of the fixed cost of the security upgrade, and then

 add the cost of overtime labor for the additional hours of business for each of the 360 business days in the year.]

Q. 6. If there are any additional issues you think are relevant to the choice of closing time, be sure to mention them. Is there anything missing from the analysis? Are there any matters that require additional data collection or research?