The 6 Step Process for Hypothesis Testing

Problem Definition: Read problem and develop problem definition.

Hypothesis: Determine if test is one or two tailed test is required. Use Format>Font in Word to set subscripts on hypotheses as indicated H_0 H_1 Use the symbol map in Word (Insert>Symbol) for the appropriate Greek symbols. You will need the correct symbols for beta β, alpha α and Mu μ.

Decision Rule: Determine the critical value for given alpha. Make sure to use the appropriate tables to select the critical value (the number of standard errors you are allowing for your confidence level.

Test Step: Extract the results of your test from the Session window in Minitab and paste into word. This the results of your statistical testing.

Conclusion: Neatly edit your conclusion as follows: State whether you test results lead you to reject or (fail to reject) null hypothesis and state the type of error that may have been made (T1 alpha error and state the alpha level or T2 if you fail to reject and state that this beta error and do not quantify).

Include critical value and state the number of standard errors you allowed/critical ratio and the number of standard errors that resulted.

Using numbers to and express the confidence interval and include whether the parameter of interest falls within the interval or outside the interval. Present the pvalue and compare to alpha.

Interpretation: Briefly report your findings in so that the reader understands the outcome. For example, the hot chocolate temperatures from the sample are not significantly different from those hypothesized. Hot chocolate temperature is with specification and no action need be taken. Remember if you fail to reject the null the sampling error is caused by chance alone. If you reject the null chance and some other factor(s) are causing the sampling error to be larger than acceptable. Y

Notes regarding assumptions: For samples containing less than 30 items be sure to address the assumption of normality using the boxplot from Minitab. When the graph appears in Minitab, position your cursor in the white space within the graph, right click and select *copy graph*. Open Word, place your cursor where you want to paste the graph, go to edit on the toolbar and select *paste special* (paste special is not available on the right click menu).To resize, click on graph and six sizing handles will appear around the outer edges of the graph. For best results click and hold the sizing handle in the lower right corner and move diagonally to the upper left-hand corner until size desired is achieved. The graph sizes in this handout are acceptable for your report but make sure you can read the verbiage within the graph. You must refer to the graph characteristics to support the assumption or indicate the assumption has been violated. You cannot make statements such as the graph indicates normality. You need to express what about the graph supports your determination.

Satisfy Assumptions: If needed (sample is normally distributed, approx. of binomial with normal etc.)