$\overline{X}$ = 3.8 S_X = 1.6   α = 5%   n = 300

Population   **Aquatics Paints Customers**

Quantitative Variable   **Preference Score for Ruby Red**

Step I Identify Procedure:

We want to estimate the mean for preference score for Ruby Red in the population of Aquatics Paints Customers (μ).

Step II Check Conditions:

* Random Sample: A random sample was conducted to insure every member of the population was equally
    likely to be selected.

* Normal Sampling Distribution: The sampling distribution of all possible sample means has an approximately
    normal shape because the sample was of sufficient size, over 30 (per the Central Limit Theorem).

* Independence: The lack of replacement is not a problem in this case because the number of subjects in the
    population is more than 10 times the sample size.

Step III Perform Procedure:

Estimate   **Margin of Error**

3.8   **"+/-"**   0.2

95% Confidence Interval Ranges From   3.6   **to**   4.0

Step IV Interpretation:

We are 95% confident that the mean for preference score for Ruby Red in the population of Aquatics Paints Custtomers (μ) falls between 3.6 and 4.0.