

## C2

$$\bar{X} = 5.2$$

Population

Quantitative Variable

$$S_x = 2.4$$

Aquatics Paints Customers

Preference Score for Organic Orange

$$\alpha = 5\%$$

$$n = 300$$

### Step I Identify Procedure:

We want to estimate the mean for preference score for Organic Orange in the population of Aquatics Paint Customers ( $\mu$ ).

### 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:**

<b>Estimate</b>		<b>Margin of Error</b>
<b>5.2</b>	<b>+/-</b>	<b>0.3</b>

**95% Confidence Interval Ranges From** **4.9** **to** **5.5**

**Step IV Interpretation:**

We are **95%** confident that the mean for **preference score for Organic Orange** in the population of **Aquatics Paints customers ( $\mu$ )** falls between **4.9** and **5.5**.