C3

$$p = 15\% \qquad \alpha = 5\% \qquad n = 450$$

Population   **Voters in the United States**

Focus Proportion   **Adults Supporting Gingrich**

Step I Identify Procedure:

We want to estimate the proportion of adults supporting Gingrich in the population of voters in the United States (ρ).
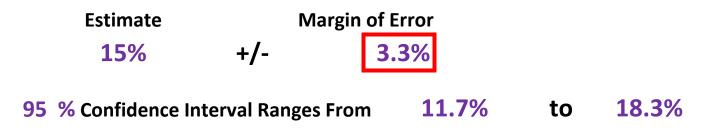
Step II Check Conditions:

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

Normal Sampling Distribution: The sampling distribution of all the possible sample proportions has an approximately normal shape because:

$$n * \rho > 10 \qquad\qquad\qquad n * (1 - \rho) > 10$$
$$450 * 15\% > 10 \qquad\qquad 450 * 85\% > 10$$

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.

Inference: Confidence Interval Proportion

Step III Perform Procedure:

Estimate **Margin of Error**

15% **+/-** **3.3%**

95 % Confidence Interval Ranges From **11.7%** **to** **18.3%**

Step IV Interpretation:

We are **95%** confident that the proportion of **adults supporting Gringrich** in the population
 of **voters in the United States** (ρ) falls between **11.7%** and **18.3%.**

NOTE: Formula for standard deviation used in the CONFIDENCE.NORM is:

$$\sqrt{\rho \cdot (1 - \rho)}$$

Inference: Confidence Interval Proportion

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