

$$\hat{p} = 33\% \quad \alpha = 5\% \quad n = 450$$

Population: Voters in the United States
Focus Proportion: Adults Who Support Santorum

Step I Identify Procedure:

We want to estimate the proportion of adults who support Santorum in the population of voters in the United States (p).

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 proportions has an approximately normal shape because:

$$\begin{array}{ll} n * p > 10 & n * (1 - p) > 10 \\ 450 * 33\% > 10 & 450 * 67\% > 10 \end{array}$$

* **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
33%	+/- 4.3%
95% Confidence Interval Ranges From	28.7% to 37.3%

Step IV Interpretation:

We are 95% confident that the the proportion of adults who support Santorum in the population of voters in the United States (p) falls between 28.7% and 37.3%.