Another 7.2 Problem

Survey 750 voters (as they leave the polling place) to learn that 360 voted for prop 30. Is this unusually low? (Assume that the population proportion was 0.50).

Answer

with a \( z = \frac{\hat{p} - p}{\sqrt{\frac{pq}{n}}} = \frac{.48 - .50}{\sqrt{\frac{.50(1-.50)}{750}}} = -1.10 \)

\( \hat{p} = \frac{x}{n} = \frac{360}{750} \approx 0.48 \)

\( p = .50 \), \( q = 1 - p = .50 \)

\( n = 750 \)

Not unusual

ANSWER

with a \( z \) \( \Rightarrow \) p-value = \( P(\hat{p} \leq 0.48) \)

Check for approx. normality:

\( np = 750(.50) = 375 \geq 10 \)

\( nq = 750(.50) = 375 \geq 10 \)

\( \frac{z}{.80} \) \( \frac{-1.1}{.1357} \) \( \downarrow \) Not less than .05

Not unusual