Answer on Question #75329 – Math – Statistics and Probability

Question

Suppose we conduct a poll to estimate the proportion of voters who favor a major presidential candidate. Assuming that 50 percent of the electorate could be in favor of the candidate, determine the sample size needed so that we are 95 percent confident that , the sample proportion of voters who favor the candidate, is within a margin of error of .01 of p, the population proportion of all voters who are in favor of the candidate.

Solution

$$0.01 \geq 1.96 \cdot \sqrt{\frac{0.5 \cdot 0.5}{n}}$$
$$\downarrow$$
$$n \geq 9,604$$

Sample size is at least 9,604.

Answer: at least 9,604.