

Worksheet: Confidence Intervals for Proportions

1. The mayor of a small city has suggested that the state locate a new prison there, arguing that the construction project and resulting jobs will be good for the local economy. A total of 183 residents show up for a public hearing on the proposal, and a show of hands finds only 31 in favor of the prison project. What can the city council conclude about public support for the mayor's initiative?
2. An appliance manufacturer stockpiles washers and dryers in a large warehouse for shipment to retail stores. Sometimes, handling them the appliances get damaged. Even though the damage may be minor, the company must sell those machines at drastically reduced prices. One day an inspector randomly checks 60 washers and finds that 5 of them have scratches or dents. Compute a 95% confidence interval for the proportion of appliances from this manufacturer that get damaged during shipment.
3. It is believed that as many as 25% of adults over 50 never graduated from high school. We wish to see if this percentage is the same among the 25 to 30 age group. How many of this younger age group must we survey in order to estimate the proportion of non-grads to within 6% with 90% confidence?