Researchers claim that the average age at which children start walking is 12.5 months. A child psychologist wanted to study if this claim was true. She took a random sample of 18 children and found that the mean age at which these children started walking was 12.9 months with a standard deviation of 0.8 months. If it is known that the ages at which children start waling is approximately normally distributed, does our sample data suggest that the true age at which all children start walking is different from 12.5 months?

Answer this question by conducting a formal test of significance at the α = 0.01 level of significance.

NULL AND ALTERNATIVE HYPOTHESES

TEST STASTISTIC

CRITICAL REGION

DECISION AND IN-CONTEXT CONCLUSION

Given that α = 0.01, construct a 99% confidence interval estimate of the true average age at which all children start walking. Can this information be used for the purpose of hypothesis testing?

In a 2011 survey conducted by the National Institute on Alcohol Abuse and Alcoholism, 33% of American adults said that they had never consumed alcohol. Suppose that this result is true for the 2011 population of American adults. In a recent random sample of 2300 adults Americans, 35% said that they have never consumed alcohol. Does the data support that the current percentage of American adults who have never consumed alcohol is significantly greater than 33%?

Answer this question by conducting a formal test of significance at the α = 0.05 level of significance.

NULL AND ALTERNATIVE HYPOTHESES

TEST STASTISTIC

CRITICAL REGION

DECISION AND IN-CONTEXT CONCLUSION