

Answer on Question #66085 – Math – Statistics and Probability

Question

A simple random sample of 36 cans of regular Coke has a mean volume of 12.19 oz. Assume that the standard deviation of all cans of regular Coke is 0.11 oz. Use a 0.01 significance level to test the claim that cans of regular Coke have volumes with a mean of 12 oz, as stated on the label.

a. State the null (H0) and alternative (H1) hypotheses.

Solution

The null hypothesis is

$$H_0: \mu = 12.$$

The alternative hypothesis is

$$H_1: \mu \neq 12.$$

The test statistic is

$$z = \frac{\bar{x} - \mu}{\sigma / \sqrt{n}} = \frac{12.19 - 12}{0.11 / \sqrt{36}} = 10.36.$$

The P-value is

$$p < 0.0001.$$

Since P-value is less than 0.01 we should reject the null hypothesis and conclude that cans of regular Coke do not have volumes with a mean of 12 oz, as stated on the label.

Answer:

$$H_0: \mu = 12 ; H_1: \mu \neq 12.$$

Answer provided by <https://www.AssignmentExpert.com>