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9.2(3). Find the p -value for the following large-sample tests whose test statistic has the given z -score:

(a) A right-tailed test, z -score = 1.15 4

(b) A two-tailed test, z -score = -2.78 9

(c) A left-tailed test, z -score = -1.81 8

9.4'(6). A random sample of $n=35$ observations from a quantitative population produces a mean of $\bar{x}=2.4$ with std. dev. $s=.29$. Suppose your research objective is to show, at the 5% significance level, that the population mean μ exceeds 2.3 .

(a)(2) State the null hypothesis H_0 : 5
 State the alternative hypothesis H_a : 5
 Give the null region:

(b) Find the standard error of \bar{x} . 13

(c)(2) Calculate the z -score of $\bar{x} = 2.4$ 6
 Calculate the p -value. . . . 2

(d) Do the data indicate that $\mu > 2.3$ at the 5% significance level?

9.8(6). High airline occupancy rates on scheduled flights are essential to corporate profitability. Suppose a scheduled flight must average at least 60% occupancy in order to be profitable. An examination of the occupancy rate for 120 10:00 A.M. flights from Atlanta to Dallas showed a mean occupancy per flight of 58% with a std. dev. of 11%.

(a)(2) If μ is the mean occupancy per flight and if the company wishes to determine whether or not this scheduled flight is unprofitable, give the alternative and the null hypothesis.

Null hypothesis H_0 :

Alternative hypothesis H_a :

Give the null region for μ :

(a') SE = 1

(b) Is this a one- or two-tailed test?

(b') Find the p -value. . . . 5

(c) The occupancy data for the 120 flights seems to suggest that this scheduled flight is unprofitable? Is this evidence significant at the 5% significance level?

9.10'(4). An internet server claims that its users average 13 hours per week. But in a survey of 250 of the users the average user in the survey spent 10.5 hours per week with std. dev. 5.2 .

SE= In words, μ is

(b) Does the data indicate, at the 1% significance level, that the actual usage differs from the claimed 13 hours per week? Find the p -value to justify your answer.

H_0 : H_a : Null region for μ :

p -value _____

Answer:

(d) Does the data indicate, at the 1% significance level, that the actual usage is less than the claimed 13 hours per week? Find the p -value to justify your answer.

H_0 : H_a : Null region for μ :

p -value _____

Answer:

Note: p -values don't depend on the significance level α . They do depend on whether the test is left, right or two-sided.