1 A sample of 81 observations is taken from a normal population with a standard deviation of 5. The sample mean is 40.

Determine the 95 percent confidence interval for the population mean. **(Round your answers to 3 decimal places.)**

Confidence interval for the population mean is [ ] and [ ]

2 During a national debate on changes to health care, a cable news service performs an opinion poll of 500 small-business owners. It shows that 65 percent of small-business owners do not approve of the changes.

(a) Develop a 95 percent confidence interval for the proportion opposing health care changes. **(Round your answers to 4 decimal places.)**

Confidence interval for the proportion [ ] and [ ].

(b) Do majority approve?

(Click to select)

3

You need to estimate the mean number of travel days per year for outside salespeople. The mean of a small pilot study was 150 days, with a standard deviation of 14 days.

If you must estimate the population mean within 2 days, how many outside salespeople should you sample? Use the 90 percent confidence level. **(Round your answer to the next whole number.)**

Number of outside salespeople

4 A sample of 35 observations is selected from a normal population. The sample mean is 30, and the population standard deviation is 4. Conduct the following test of hypothesis using the .05 significance level.

$H_0: \mu \leq 29$
$H_1: \mu > 29$

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

(Click to select)

(b) What is the decision rule? **(Round your answer to 2 decimal places.)**

(Click to select) H_0 and (Click to select) H_1 when $z >$ ____

(c) What is the value of the test statistic? **(Round your answer to 2 decimal places.)**

Value of the test statistic ____

(d) What is your decision regarding H_0?

(Click to select)

There is (Click to select) evidence to conclude that the population mean is greater than 29.

(e) What is the p-value? **(Round your answer to 4 decimal places.)**

____

5

A sample of 35 observations is selected from a normal population. The sample mean is 30, and the population standard deviation is 4. Conduct the following test of hypothesis using the .05 significance level.

$H_0: \mu \leq 29$
$H_1: \mu > 29$

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

(Click to select)

(b) What is the decision rule? **(Round your answer to 2 decimal places.)**

(Click to select) H_0 and (Click to select) H_1 when z > ____

(c) What is the value of the test statistic? **(Round your answer to 2 decimal places.)**

Value of the test statistic ____

(d) What is your decision regarding H_0?

(Click to select)

There is (Click to select) evidence to conclude that the population mean is greater than 29.

(e) What is the p-value? **(Round your answer to 4 decimal places.)**

____

6 Tina Dennis is the comptroller for Meek Industries. She believes that the current cash flow problem at Meek is due to the slow collection of accounts receivable. She believes that more than 60 percent of the accounts are in arrears more than three months. A random sample of 200 accounts showed that 140 were more than three months old. At the .01 significance level, can she conclude that more than 60 percent of the accounts are in arrears for more than three months?

(a) State the null hypothesis and the alternate hypothesis. **(Round your answers to 2 decimal places.)**

H_0: $\pi \leq$ ☐
H_1: $\pi >$ ☐

(b) State the decision rule for .01 significance level. **(Round your answer to 2 decimal places.)**

Reject H_0 if z is > ☐

(c) Compute the value of the test statistic. **(Round your answer to 2 decimal places.)**

z value is ☐

(d) At the .01 significance level, can she conclude that more than 60 percent of the accounts are in arrears for more than three months?

(Click to select) ▾ H_0. Ms. Dennis is (Click to select) ▾ in concluding that more than 60 percent of the accounts are in arrears for more than three months.

7 What is another name for the alternate hypothesis?

Multiple Choice

- Null hypothesis
- Hypothesis of no difference
- Rejected hypothesis
- Research hypothesis

8 If the critical z-value for a test statistic equals 2.45, what value of the test statistic would provide the least chance of making a Type I error?

Multiple Choice

- 3.74
- 10,000
- 2.46
- 4.56

Quiz - Week 4

Saved

9 The probability of a Type II error is directly related to

Multiple Choice

- α
- The standard deviation.
- Type I error.
- The difference between the hypothesized mean and the sample mean.

10

Part 1 of 5

Required information

[The following information applies to the questions displayed below.]

The waiting time for customers at MacBurger Restaurants follows a normal distribution with a mean of 3 minutes and a standard deviation of 1 minute. At the Warren Road MacBurger, the quality-assurance department sampled 50 customers and found that the mean waiting time was 2.75 minutes. At the .05 significance level, can we conclude that the mean waiting time is less than 3 minutes?

State the null hypothesis and the alternate hypothesis.

H_0: $\mu \geq$ ☐

H_1: $\mu <$ ☐