

Probability and Statistics - MAS291

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 Started on
 Monday, 30 March 2020, 1:37 PM

 State
 Finished

 Completed on
 Monday, 30 March 2020, 1:37 PM

 Time taken
 9 secs

 Marks
 1.00/16.00

 Grade
 0.63 out of 10.00 (6%)

Question **1**

Mark 0.00 out of 1.00

The standard IQ test has a mean of 106 and a standard deviation of 12. We want to be 90% certain that we are within 4 IQ points of the true mean. Determine the required sample size.

Select one:

- a. 6
- b. 34
- o c. 25
- d. 130
- The correct answer is: 25

Question $\mathbf{2}$

Complete Mark 1.00 out of 1.00

▼ Flag question

Suppose that an internal report submitted to the managers at a bank in Boston showed that with 95% confidence, the proportion of the bank's customers who also have accounts at one or more other banks is between 0.40 and 0.46. Given this information, what sample size was used to arrive at this estimate?

Select one

- a. Can't be determined without more i
- b. Approximately 1,066
- c. Approximately 344
- d. Approximately 700

$E = \frac{\text{upper} - \text{lower}}{2} = 0.03$ $P \text{ m}\tilde{u} = \frac{\text{lower} + \text{upper}}{2} = 0.43$

P mũ =
$$\frac{2}{2}$$
 = 0.43
 $n = 1.96^2 * \frac{0.43 * 0.57}{0.03^2} = 1046...$

The correct answer is: Approximately 1,066

Question 3 Not answered Marked out of 1.00

▼ Flag question

A group of 55 bowlers showed that their average score was 190 with a population standard deviation of 8. Find the 99% confidence interval of the mean score of all bowlers.

Select on

- a. (187.2, 192.8)
- b. (189.5, 194.5)
- D. (107.5, 17.1.5)
- c. (188.5, 195.6)
- d. (186.5, 197.5)

For mean

X ngang
$$\pm$$
 E = $z0.005 * \frac{\delta}{\sqrt{n}}$

$$190 \pm \frac{-2.575^{11} * 8}{\sqrt{55}}$$

The correct answer is: (187.2, 192.8)

Question 4

Not answered

Marked out of 1.00

▼ Flag question

A local bank needs information concerning the checking account balances of its customers. A random sample of 18 accounts was checked. The mean balance was \$600.70 with a standard deviation of \$196.20. Find a 98% confidence interval for the true mean. Assume that the account balances are normally distributed.

Select one

- a. (\$438.23, \$726.41)
- b. (\$487.31, \$563.80)
- c. (\$481.85, \$719.55)
- d. (\$513.17, \$860.33)

The correct answer is: (\$481.85, \$719.55)

Question 5

The waiting times (in minutes) of customers at the TienPhong Bank, where



Not answered

Marked out of 1.00

Flag question

customers enter a single waiting line that feeds three teller windows, are normally distributed. A random sample of 6 has mean of 7.07 and standard deviation of 0.53. Construct a 94% upper confidence bound for the population standard deviation. Let $\chi^2_{0.06,5} = 10.596$ and $\chi^2_{0.94,5} = 1.250$.

Select one

- a. 2.35
- b. 1.06
- c. None of the other choices is correct
- d. 1.3

$$\label{eq:lower confident} \begin{split} & \textit{Lower confident} = \textit{X}(\infty, n-1) \\ & \textit{Upper confident} = \textit{X}(1-\infty, n-1) \\ & \sqrt{\frac{(6-1)*0.53^2}{1.25}} \leq \delta \end{split}$$

The correct answer is: 1.06

Question 6 Not answered

Not answered

Marked out of 1.00

Flag guestion

The fraction of defective integrated circuits produced in a photolithography process is being studied. A random sample of 200 circuits is tested, revealing 8 defectives. Find a 95% two-sided confidence interval on the fraction of defective circuits produced by this particular tool.

Select one:

- a. (0.013, 0.085)
- b. (0.003, 0.085)
- c. (0.003, 0.067)
- d. (0.013, 0.067)

The correct answer is: (0.013, 0.067)

Question 7

Not answered

Marked out of 1.00

Flag question

A psychologist claims that more than 16 percent of the population suffers from professional problems due to extreme shyness. Use p, the true percentage of the population that suffers from extreme shyness. Express the null hypothesis H_0 and the alternative hypothesis H_1 in symbolic form.

Select one:

- a. H₀: p = 16%H₁: p < 16%
- b. H₀: p < 16%H₁: p ≥ 16%
- c. H₀: p = 6.3% H₁: p > 6.3%
- d. H₀: p = 16% H₁: p > 16%

Claim chứa dấu = → Trùng Ho Claim không chứa dấu = → Trùng H1

More than $16\% \backsim p > 16\%$ => Claim không chứa dấu = \rightarrow Trùng H1 => H1: p > 16% và Ho = 16%(Ho luôn chứa dấu =)

The correct answer is: H_0 : p = 16%

H₁: p > 16%

Question 8

Not answered

Marked out of 1.00

Flag question

You wish to test the claim that μ > 6 at a level of significance of α = 0.05. Let sample statistics be n = 60, s = 1.4 \overline{x} \equiv 6.3. Compute the value of the test statistic. Round your answer to two decimal places.

Select one:

- a. 3.11
- b. 1.77
- c. 2.31
- d. None of the other choices is true
- e. 1.66

The correct answer is: 1.66

Question **9**

Not answered

Marked out of 1.00

Flag question

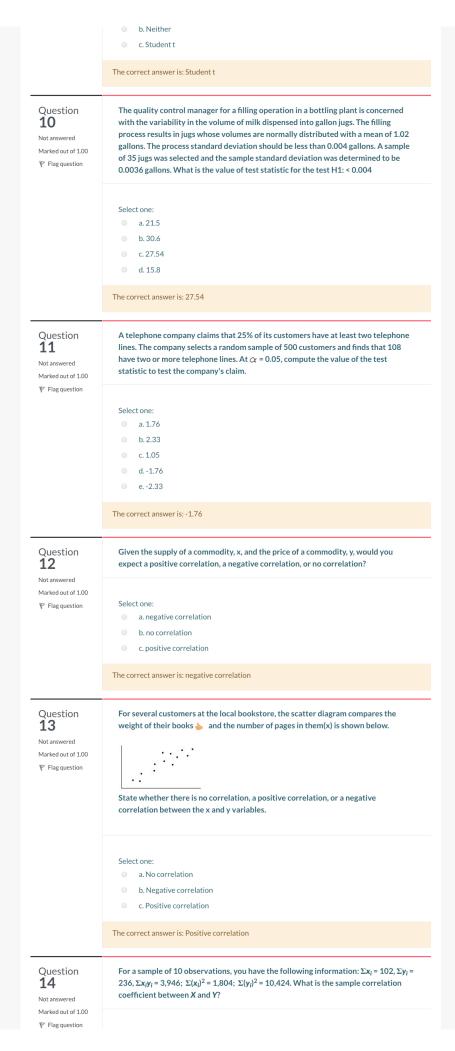
 $Determine \ whether \ the \ hypothesis \ test involves \ a \ sampling \ distribution \ of \ means \ that \ is \ a \ normal \ distribution, \ Student \ t \ distribution, \ or \ neither.$

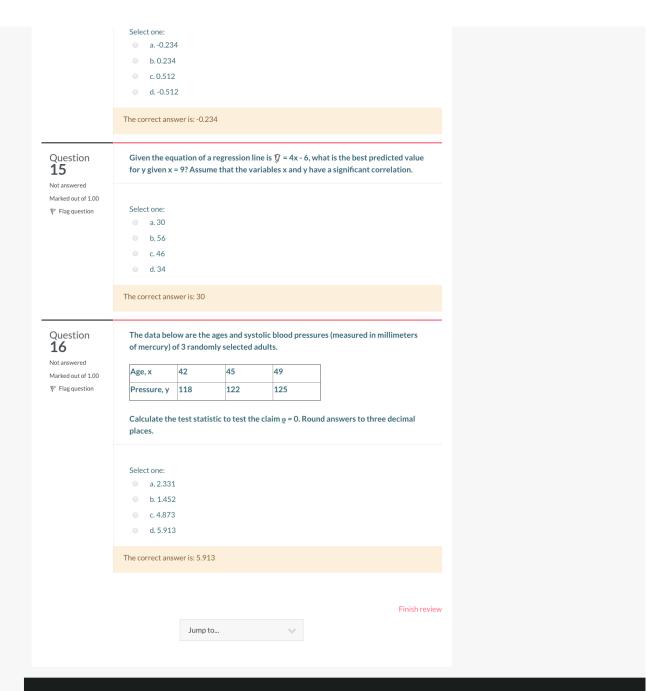
Claim: μ = 78. Sample data: n = 24, $\overline{x}=101$, s = 15.3. The sample data appear to come from a population that is normally distributed and σ is unknown.

Select one:

a. Normal

a. INOTITIO





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