

STAT 1510 Elementary Statistics

Catalog Description:

This course emphasizes descriptive statistics including the use of probability techniques, hypothesis testing, and predictive techniques to facilitate decision-making. Topics include descriptive statistics; probability and sampling distributions; statistical inference; correlation and linear regression; analysis of variance, chi-square and t-tests; and application of technology for statistical analysis including the interpretation of the relevance of the statistical findings. Applications using data from disciplines including business, social sciences, psychology, life science, health science, and education, sampling, sampling distributions, measures of central tendency and measures of dispersion, introductory treatment of probability and statistical inference with one and two sample problems, confidence intervals and hypothesis testing regarding means and proportions, and correlation and linear regression, ANOVA and nonparametric techniques such as the one-sample sign test, Wilcoxon rank-sum, Spearman's correlation, odds ratios and Kruskal-Wallis. C-ID: MATH 110. Transfer Credit: CSU; UC.

SLO:

Course #1 - Complete an appropriate analysis of real world data.

Course #2 - Evaluate the appropriateness of statistics reported in a journal article and/or the news media.

Sample Problems:

Stat 1510 Sample Problems

These problems should be done without a calculator.

- Which one of the following is in the correct order?
 - $.010 < .05 \leq .005 < .10$
 - $.010 \leq .01 \leq .05 < .10$
 - $.005 \leq .05 \leq .010 < .10$
 - $.01 < .010 \leq .005 < .05$
- If $y = ax$ with $a > 0$ and $x > 0$, what happens to the value of y as x becomes smaller?
 - y becomes smaller
 - y becomes larger
 - y becomes negative
 - y stays the same, since $a > 0$
- If $y = \frac{a}{x}$ with $a > 0$ and $x > 0$, what happens to the value of y as x becomes larger?
 - y becomes smaller
 - y becomes larger
 - y becomes negative
 - y stays the same, since $a > 0$

4. If $\sqrt{26} \approx 5.1$ and $\sqrt{33} \approx 5.74$ then $\sqrt{28}$ is nearest:
 a) 5.22 b) 5.55 c) 5.75 d) 5.11
5. Solve the equation for x: $3x + 7 = 22.5$
 a) 2.5 b) 1.8333... c) -2 d) 5.1666...
6. Find the value of x in the equation given that $A = 3$ and $b = 12$. $A = \frac{b}{\sqrt{x}}$
 a) 12 b) 30 c) 16 d) $\sqrt{3}$
7. A student had a score of 40 on the midterm exam and an 85 on the final exam. The final was weighted twice as heavily as the midterm. What was the final average score?
 a) 60 b) 70 c) 80 d) 90

Solve for the specified variable.

8. Solve for m. $z = \frac{x - m}{n}$

9. Solve for b. $\frac{a}{b} = \frac{e}{d}$

10. Solve for n. $z = \frac{x - m}{\sqrt{n}}$

11. What is the slope of the line with equation: $y = 2x - 2$?

12. What is the slope of the line with equation: $3x + y = 12$?

13. $(9.4)^2$ is closest to 20 30 40 50 60 70 80 90

14. $\sqrt{824}$ is closest to 20 30 40 50 60 70 80 90

15. 72.7% of 59.93 is closest to 20 30 40 50 60 70 80 90

Answers

1. b
 2. a
 3. b
 4. a

5. d

6. c

7. b

8. $m = x - nz$

9. $b = \frac{ad}{e}$

10. $n = \left(\frac{x - m}{z} \right)^2$

11. 2

12. -3

13. 90

14. 30

15. 40