

QUESTION

1

TOTAL SCORE

POINTS

15/15

15/15

100.0%

SAT, JAN 20, 2024

11:59 AM GMT+3



Request Extension

**Instructions**

Do only parts a, b, and c.

**Assignment Submission & Scoring****Assignment Submission**

For this assignment, you submit answers by questions. You are required to use a new randomization after every 3 question submissions.

**Assignment Scoring**

Your best submission for each question part is used for your score.

1. [15/15 Points]

DETAILS

PREVIOUS ANSWERS

ROSBIOSTAT8 12.E.001-005.S.

1/6 Submissions Used

MY NOTES

ASK YOUR TEACHER

**Nutrition**

Researchers compared protein intake among three groups of postmenopausal women: (1) women eating a standard American diet (STD), (2) women eating a lacto-ovo-vegetarian diet (LAC), and (3) women eating a strict vegetarian diet (VEG). The mean  $\pm 1$  *sd* for protein intake (mg) is presented in the table below.

**Protein Intake (mg)  
Among Three Dietary  
Groups of Postmenopausal  
Women**

Group	Mean	<i>sd</i>	<i>n</i>
STD	76	8	10
LAC	56	14	10
VEG	48	16	8



USE SALT

You can use the Distribution Calculators page in SALT to find critical values and/or *p*-values to answer parts of this question.

- (a) Perform a statistical procedure to compare the means of the three groups using the critical-value method. (Use  $\alpha = 0.05$ .)

State the null and alternative hypotheses.

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State the null and alternative hypotheses.

$H_0: \alpha_i = 0$  for all  $i$   
 $H_1: \text{at least one } \alpha_i \neq 0$

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Find the test statistic. (Round your answer to two decimal places.)

11.65 ✓

Find the critical value. (Round your answer to two decimal places.)

3.39 ✓

State your conclusion.

Fail to reject  $H_0$ . There is insufficient evidence to conclude that the means of these three groups are not all the same.

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- (b) Use technology to find the  $p$ -value from the test performed in part (a). (Round your answer to four decimal places.)

$p$ -value = 0.0003 ✓

- (c) Compare the means of each specific pair of groups using the LSD methodology. (Round your test statistics to two decimal places and your  $p$ -values to four decimal places. Use  $\alpha = 0.05$ .)

Comparison Groups	test statistic	$p$ -value	Significant Difference?
STD, LAC	3.48 ✓	0.0019 ✓	Yes ⇅ ✓
STD, VEG	4.59 ✓	0.0001 ✓	Yes ⇅ ✓
LAC, VEG	1.31 ✓	0.2018 ✓	No ⇅ ✓