UTAustinX: UT.7.01x Foundations of Data Analysis

KarenWest ▼

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Question 3

A local police department has divided the city into three sections, and each is patrolled by a different set of six (6) officers. The police chief wants to determine if officers are biased in the number of disorderly conduct tickets that they give out in each section.

Here are the number of tickets given by the officers in each section in the last week:

Section 1	Section 2	Section 3
8	3	1
4	7	2
6	0	7
8	2	6
6	7	5
4	5	0

(1 point possible)

3a. Which of the following is the alternative hypothesis for this test?

○ HA: Police officers in at least one section of the city give out a different number of [OBJ]tickets on average. ✔

○ HA: Police officers in at least two sections of the city give out a different number of [OBJ]tickets on average than the third.

○ HA: The average number of tickets handed out are equal across the three sections of the city.

Help

| Hide Answer | *You have used 0 of 1 submissions*

(1 point possible)

3b. What are the **degrees of freedom** for this problem?

Numerator Degree of Freedom

[   ]

[   ]

Answer: 2

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(1 point possible)

Denominator Degree of Freedom

[   ]

Answer: 15

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(1 point possible)

3c. What is SS_{Total} for this problem? *(Round to 1 decimal place.)*

Answer: 118.5

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(1 point possible)

3d. What is $MS_{Between}$ for this problem? *(Round to 1 decimal place.)*

Answer: 10.5

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(1 point possible)

3e. What is MS_{Within} for this problem? *(Round to 1 decimal place.)*

Answer: 6.5

| Hide Answer | *You have used 0 of 1 submissions* |

(1 point possible)

3f. What is the **F statistic** for this test? *(Round to 3 decimal places.)*

Answer: 1.615

Hide Answer   *You have used 0 of 1 submissions*

(1 point possible)

3g. What is the appropriate conclusion for this test?

- ◯ Because our Null Hypothesis is Rejected, there is evidence to suggest that police officers are giving out a different number of tickets in these three sections, on average.

- ◯ There is NO evidence to suggest that police officers are giving out a different number of tickets in these three sections, on average. ✔️

- ◯ Police officers in at least two sections of the city are giving out a different number of [OBJ]tickets on average than the third.

Hide Answer   *You have used 0 of 1 submissions*

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