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Week 5: Hypothesis Testing (More Than Two Group Means) &gt; Problem Set &gt; Question 3

## 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

## Testing (One Group Means)

- ▶ Week 3: Hypothesis Testing (Two Group Means)

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- ▼ Week 5: Hypothesis Testing (More Than Two Group Means)

### Readings

Reading Check due May 03, 2016 at 17:00 UTC



### Lecture Videos

Comprehension Check due May 03, 2016 at 17:00 UTC



### R Tutorial Videos

### Pre-Lab

Pre-Lab due May 03, 2016 at 17:00 UTC



### Lab

6	0	7
8	2	6
6	7	5
4	5	0

(1/1 point)


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 tickets on average. ✓


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

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

*You have used 1 of 1 submissions*

Lab due May 03, 2016 at 17:00 UTC 

### Problem Set

Problem Set due May 03, 2016 at 17:00 UTC 

(1/1 point)

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

#### Numerator Degree of Freedom



Answer: 2

*You have used 1 of 1 submissions*

(1 point possible)

#### Denominator Degree of Freedom



Answer: 15

*You have used 1 of 1 submissions*

(1/1 point)

3c. What is **SS<sub>Total</sub>** for this problem? *(Round to 1 decimal place.)*



Answer: 118.5

*You have used 1 of 1 submissions*

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(1/1 point)

3d. What is **MS<sub>Between</sub>** for this problem? *(Round to 1 decimal place.)*



Answer: 10.5

*You have used 1 of 1 submissions*

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(1/1 point)

3e. What is **MS<sub>Within</sub>** for this problem? *(Round to 1 decimal place.)*



Answer: 6.5

*You have used 1 of 1 submissions*

(1/1 point)

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



Answer: 1.615

*You have used 1 of 1 submissions*

(1/1 point)

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 tickets on average than the third.

*You have used 1 of 1 submissions*

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