Question 2

Forty-five (45) dog lovers are recruited for a study examining the calming effects of pets during stressful situations.

Fifteen (15) subjects were randomly assigned to each of three different groups:

- performing the task alone (control),

- performing the task with a good friend present, and

- performing the task with their dog present.

The peak heart rate (in beats per minute) during the task was measured for each subject, with the following results:

Testing (One Group Means)

- Week 3: Hypothesis Testing (Two Group Means)
- Week 4: Hypothesis Testing (Categorical Data)
- **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

	Alone	Good Friend	Pet Dog
Mean	82.52	91.32	73.48
SD	9.24	8.34	9.97

(1/1 point)

2a. What is the appropriate null hypothesis for this test?

- ◉ $H_0 : \mu_1 = \mu_2 = \mu_3$ ✔
- ○ $H_0 : \mu_1 \neq \mu_2 \neq \mu_3$
- ○ $H_0 : \mu_1 \neq \mu_2 = \mu_3$

You have used 1 of 1 submissions

(1/1 point)

2b. To run a reliable ANOVA, what must be true of this data?

Lab due May 03, 2016 at 17:00 UTC

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

- The heart rate data should be normally distributed in each group.
- Each group should have approximately equal standard deviations.
- Each group has independent, random data.
- All of the above. ✔

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(1/1 point)

2c. What are the **degrees of freedom** for this test?

Numerator Degree of Freedom

2 ✔

Answer: 2

2

You have used 1 of 1 submissions

(1/1 point)

Denominator Degree of Freedom

42 ✔

Answer: 42

42

You have used 1 of 1 submissions

(1/1 point)

2d. What is the **critical F** for this test, assuming α= 0.05? *(Round to 2 decimal places.)*

3.22 ✔

Answer: 3.22

3.22

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(1/1 point)

2e. In this problem, you find that SS_{total} = 5949.1 and $SS_{Between}$ = 2387.7. What is the **F statistic** for the test? *(Round to 2 decimal places.)*

14.08 ✔

Answer: 14.08

14.08

You have used 1 of 1 submissions

(1/1 point)

2f. What is the outcome of this test?

- ○ Fail to reject the null hypothesis
- ◉ Reject the null hypothesis ✔

You have used 1 of 1 submissions

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