

**Note: You must attach a copy of the JMP output for both problems to obtain full credit.**

1. Several STAT 110 students were randomly selected and surveyed. The data from this survey study can be found in the file **Student Survey Data.JMP**. In this problem, you will examine the GPAs of students that skip at least one class per week. To do this in JMP, you can select **Analyze > Distribution** and put *Skip Class* in the **By** box and *GPA* in the **Y, Columns** box. Then, look at the output for the “Yes” group.

a. Complete the table below using the results from JMP. (1 pt)

	GPA	
Skip Classes?	Mean	Standard Deviation
Yes		

b. In parts c - e, you will conduct a t-test to determine if the mean GPA of students who skip at least one class per week is below a B average (3.0). Is the t-test an appropriate analysis for these data? Hint: Check the normality assumption behind the t-test for a single mean. (1 pt)

c. Set up the null and alternative hypotheses to investigate the research question: Is the mean GPA of students who skip at least one class per week below a B average (3.0)? (1 pt)

H<sub>0</sub>:

H<sub>a</sub>:

d. Find the appropriate p-value for investigating the research question. (2 pts)

p-value: \_\_\_\_\_

e. Write a conclusion to address the research question in the context of the problem. (2 pts)

f. Use JMP to find the 95% confidence interval for the mean GPA of students who skip at least one class per week. (1 pt)

Lower endpoint: \_\_\_\_\_

Upper endpoint: \_\_\_\_\_

g. Interpret the confidence interval from part f in the context of the problem. (2 pts)

h. Does this interval agree with your conclusion given in part e? Explain your reasoning. (1 pt)

2. It is generally recommended that individuals exercise at least 3 times per week. Using the STAT 110 student survey data once again, you will investigate whether the data provides evidence that WSU students work out more than 3 times per week, on average.

a. Use JMP to find both the mean and the standard deviation of *Exercise Per Week*. Enter these values in the following table. (1 pt)

Variable	Mean	Standard Deviation
<i>Number of Times Exercised Per Week</i>		

b. Set up the null and alternative hypotheses to investigate this research question. (1 pt)

H<sub>0</sub>:

H<sub>a</sub>:

c. Find the appropriate p-value for investigating this research question. (2 pts)

p-value: \_\_\_\_\_

d. Write a conclusion in the context of the problem. (2 pts)

- e. Use JMP to find the 95% confidence interval for the mean number of times a WSU student exercises per week. (1 pt)

Lower endpoint: \_\_\_\_\_

Upper endpoint: \_\_\_\_\_

- f. Interpret the confidence interval from part e in the context of the problem. (2 pts)