Question 1

You want to know if the proportion of female performers on Austin City Limits Live has changed in the past two years.

1. Create a new variable in the dataset called "Recent" that is equal to a 1 for rows from years 2012 or 2013 and is equal to 0 for all other rows.
2. Make a table that shows the number of male and female performers in "recent" and non-recent years.
3. Use this data to answer the following questions.

*Use the "AustinCityLimits.csv" dataset to answer the following questions. Instructions for installing "AustinCityLimits.csv" can be found under the **Examine the Data** unit in this week's **Pre-Lab** section.*

You'll need to use the following code to help:

```
acl$Recent[acl$Year < 2012] <- 0
acl$Recent[acl$Year >= 2012] <- 1
```

(1 point possible)

1a. How many **female** performers have been on the show in the past two years (2012 and 2013)?

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Answer: 12

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(1 point possible)

1b. What is the appropriate method to test if representation by female performers is different before 2012 compared to since 2012?

- Chi-Square Goodness of Fit
- Chi-Square Test of Independence ✔
- t-test for Independent Samples
- t-test for Dependent Samples

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(1 point possible)

1c. Report expected counts for the following performer groups.

Females **before 2012**

26.55

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(1 point possible)

Females **in 2012 and 2013**

8.45

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(1 point possible)

Males **before 2012**

61.45

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(1 point possible)

Males **in 2012 and 2013**

19.55

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(1 point possible)

1d. What is the **Chi Square statistic**? *(Round to 2 decimal places.)*

Answer: 2.82

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(1 point possible)

1e. What is the **p-value** for the test? *(Round to 2 decimal places.)*

Answer: 0.09

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(1 point possible)

1f. What is the appropriate conclusion for this test, assuming $\alpha = 0.05$?

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- We fail to reject the null hypothesis; gender is independent of performance before or after 2012. ✔
- We reject the null hypothesis; gender is not independent of performance before or after 2012

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