10.1 Worksheet 1

Chi-Squared Goodness of Fit

**★I can construct a segmented bar graph of observed and expected counts★**

**★I can calculate the Chi-Square value★**

**★I can use the Chi-Square table to determine the P-value★**

**★ I can use the Chi-Square test to determine goodness of fit★**

1. Trix cereal comes in 5 fruit flavors, and each flavor has a different shape. A curious student sorted an entire box of the cereal and found the following distribution of flavors for the pieces of cereal in the box:

**Flavor: Grape Lemon Lime Orange Strawberry Total**

**Frequency: 530 470 420 610 585 2615**

Are the flavors equally distributed in the box of Trix cereal?

H0: The flavors are equally distributed.

Ha: The flavors are not equally distributed.

1. Add another row to the table and fill in the expected values for each flavor
2. Do a Chi-Squared goodness of fit test to determine if all the flavors are equally distributed. (Show ALL steps)
3. The percent of doctor of philosophy degrees obtained in the U.S. for each race is given. A random sample of 300 doctor of philosophy degree recipients had the following frequency distribution:

**Race/Ethnicity: White Black Hispanic Asian Non-resident**

**Percent 78.9 3.9 1.4 2.7 13.2**

**Count 189 10 6 14 81**

1. Add another row in the table with the expected count for each race.
2. Do a Chi-squared goodness of fit test to determine if the sample of 300 doctor of philosophy degrees fit the claim. (Show ALL steps)