Which color Reese's Pieces is your favorite?

> The company that makes Reese's Pieces claims the following distribution of color: 25% Brown, 25% Yellow, and 50% Orange. Is this true?

1. Record the information from the sample.

Observed counts: Brown:_____ Yellow:_____ Orange:_____

Expected counts: Brown:_____ Yellow:_____ Orange:_____

Test statistic: $\chi^2 =$ _____

2. Check conditions.

Random:

10%:

Large counts: Which expected count is the lowest? Are all of the expected counts greater than 5?

3. Calculate the P-value.

For this test df = $n - 1$, but n represents the number of categories (colors).

What is the df for this test?_____

What is the test statistic for this test?_____

Use Table C to find the P-value:_____

4. Make a conclusion. Use $\alpha = 0.05$.

5. Which color of the Reese's Pieces had an observed value the farthest from the expected?

Name: _____ Hour: _____ Date: _____

Do the data provide convincing evidence that the company was lying about the distribution of colors of Reese's Pieces? Use $\alpha = 0.05$

STATE: Hypotheses: Significance level:

 PLAN: Name of procedure:

            Check conditions:

DO: Specific Formula: Picture:

      Work:

                                                    Test statistic:

                                                    P-value:

  CONCLUDE:

What parts of the usual 4-step process are missing in this test?

Chi-Square Test for Goodness of Fit: 4-Step
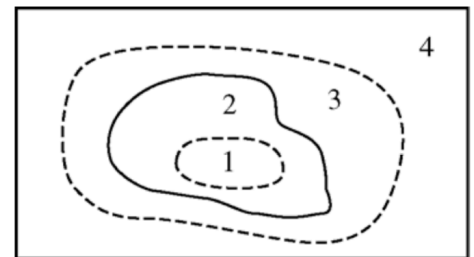
Important ideas:

Homework (2008 #5)

A study was conducted to determine where moose are found in a region containing a large burned area. A map of the study area was partitioned into the following four habitat types.

(1) Inside the burned area, not near the edge of the burned area,
(2) Inside the burned area, near the edge,
(3) Outside the burned area, near the edge, and
(4) Outside the burned area, not near the edge.

The figure below shows these four habitat types.

Note: Figure not drawn to scale.

Habitat Type	Proportion of Total Acreage	Number of Moose Observed
1	0.340	25
2	0.101	22
3	0.104	30
4	0.455	40
Total	1.000	117

The researchers who are conducting the study expect the number of moose observed in a habitat type to be proportional to the amount of acreage of that type of habitat. Are the data consistent with this expectation?

(a) Calculate the expected counts for the number moose observed in each habitat type, assuming the researchers claim is true.

(b) Find the chi-square test statistic.