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?
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?
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.

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.