Group Work - Chapter 11

1 M&Ms are expected to have the following distribution:

Color	Blue	Brown	Green	Orange	Red	Yellow
Percent	24%	14%	15%	20%	13%	14%

(a) What is the minimum number of M&Ms needed to do a valid goodness-of-fit test against the expected distribution. In other words, what is the sample size n so that the smallest expected value is at least 5?

(b) Conduct a goodness-of-fit test of whether the distribution of M&Ms is what is claimed by the company at a significance level of $\alpha = 0.05$. Make sure to state the null and alternative hypotheses, and your conclusion in context of question.

2 The Tortilla and Cheese Organization (TACO) thinks that preferences for types of tacos are the same for men and women. They conduct a survey and collect the following data ("taco_preference.csv" on D2L):

	Type of taco			
Gender	Beef	Pork	Chicken	Fish
Men	105	34	56	27
Women	83	29	75	35

Test the claim the taco preference is the same for men and women at $\alpha = 0.05$ level of significance. Make sure to state the null and alternative hypotheses, and your conclusion in context of question.

3 The file "hair_eye.csv" on D2L contains data on the hair color, eye color and gender for statistics students. Test whether there is an association between hair color and gender at significance level $\alpha = 0.05$. Make sure to state the null and alternative hypotheses, and your conclusion in context of question. Is there an association between eye color and gender?