Unit 8 – Inference for Categorical Data: Chi-Square

2 – 5% Exam Weight

Day	Lesson and Objectives	Assignment
3/6	**Notes 1 – The Chi-Square Goodness of Fit Test** • VAR-1.J Identify questions suggested by variation between observed and expected counts in categorical data. • VAR-8.A Describe chi-square distributions. • VAR-8.B Identify the null and alternative hypotheses in a test for a distribution of proportions in a set of categorical data. • VAR-8.C Identify an appropriate testing method for a distribution of proportions in a set of categorical data. • VAR-8.D Calculate expected counts for the chi-square test for goodness of fit. • VAR-8.E Verify the conditions for making statistical inferences when testing goodness of fit for a chi-square distribution. • VAR-8.F Calculate the appropriate statistic for the chi-square test for goodness of fit. • VAR-8.G Determine the p-value for chi-square test for goodness of fit significance test. • DAT-3.I Interpret the p-value for the chi-square test for goodness of fit. • DAT-3.J Justify a claim about the population based on the results of a chi-square test for goodness of fit.	HW 1
3/9	**M&M Activity: Distribution of Colors** • Students will use a fun-size bag of M&Ms to perform a chi-square goodness of fit test.	
3/10	**Notes 2 – Chi-Square Test for Homogeneity** • VAR-8.H Calculate expected counts for two-way tables of categorical data. • VAR-8.I Identify the null and alternative hypotheses for a chi-square test for homogeneity or independence. • VAR-8.J Identify an appropriate testing method for comparing distributions in two-way tables of categorical data. • VAR-8.K Verify the conditions for making statistical inferences when testing a chi-square distribution for independence or homogeneity. • VAR-8.L Calculate the appropriate statistic for a chi-square test for homogeneity or independence. • VAR-8.M Determine the p-value for a chi-square significance test for independence or homogeneity. • DAT-3.K Interpret the p-value for the chi-square test for homogeneity or independence. • DAT-3.L Justify a claim about the population based on the results of a chi-square test for homogeneity or independence.	HW 2

3/11	**Notes 3 – Calculator Commands and the Follow-Up Analysis** • Students will learn the calculator commands on the TI-84 for both chi-square tests • Students will perform a follow-up analysis of a chi-square test for homogeneity to further interpret the results of the significance test.	HW 3
3/12	**Unit 8 Circuit** • Students practice a chi-square GOF test and a chi-square test for homogeneity in a classic circuit-style worksheet	
3/13	**Unit 8 Quiz**	
3/16	**Notes 4 – Chi-Square Test for Association/Independence** • All the learning objectives from Notes 2, but covered again for the chi-square test for association/independence. • TOPIC 8.7 Skills Focus: Selecting an Appropriate Inference Procedure for Categorical Data	HW 4
3/17-19	**Unit 8 Summary** • Unit 8 Summary Slides with Student Handout • Work on Test Review for the rest of class **Unit 8 Review Activity**	Unit 8 Test Review
3/20	**Unit 8 Test**	