Section 10.2 IRA Guide

Introduction

Screen 1: You need to create a probability distribution. You can do this in StatCrunch by making a Bar Plot (with summary). Also, you will need to recall than an event is unusual if it has a probability that is less than 0.05. [Section 5.1]

Screen 2: z sub alpha is the z-value that has an area of alpha to the right of it. Use StatCrunch's normal calculator with mu=0 & sigma=1 to find the value that has alpha to the right of it. Do not use the normal distribution table. [Section 7.2]

Screen 3: This is a normal probability problem – use StatCrunch's normal calculator. [Section 7.2]

Screen 4: This is a normal probability problem – use StatCrunch's normal calculator. [Section 7.2]

Screen 5: I have deleted this problem about the sampling distribution of the sample proportion, so you should see a blank screen here.

Screen 6: Use the binomial calculator in StatCrunch. [Section 6.2]

Screen 7: List of Objectives

Objective 1 – Logic of Hypothesis Testing

Screen 1: Preview of an applet to understand hypothesis testing for p.

Screen 2: Click on the link and try this applet out to develop your conceptual understanding.

Screen 3: This exercise is based on the applet on Screen 2.
You only get one attempt at this problem, so be sure that you have worked your way through the applet on Screen 2.

Screen 4: This exercise is also based on the applet on Screen 2.
You only get one attempt at this problem, so be sure that you have worked your way through the applet on Screen 2.

Screen 5: This exercise is also based on the applet on Screen 2.
You only get one attempt at this problem, so be sure that you have worked your way through the applet on Screen 2.

Screen 6: Be sure that you understand the definition of statistically significant.

Screen 7: Be sure that you understand the 3 conditions that must be verified before testing a hypothesis about p.

Screen 8: Give this screen a quick read.

Screen 9: This screen explains the concept of a P-value, which is the basis for all of the hypothesis tests throughout the rest of the course.

Screen 10: A visual explanation of the P-value approach.

Objective 2 – Testing Hypotheses for p

Screen 1: A complete explanation of the 5 steps for testing a hypothesis about a population proportion p. (We use technology for Step 3, we do not follow the by hand directions.) You should watch the video with the link at the top of the screen.

Screen 2: Example 1 is the first complete hypothesis test for p. You should definitely watch the StatCrunch video.

Screen 3: This exercise is based on Example 1 on the previous screen. Be sure to do the calculations with StatCrunch, not by hand with the formulas.

Screen 4: Example 2 is a two-tailed hypothesis test for p. Again, be sure to watch the StatCrunch video solution.

Screen 5: This exercise is based on Example 2 on the previous screen. Do the calculations using StatCrunch.

Screen 6: This screen explains how to test hypotheses using confidence intervals. The test has to be a two-tailed test. We will not use this approach, although you will have to do it in this assignment. You reject the null hypothesis if the claimed population proportion is not inside the interval. Otherwise you fail to reject the null hypothesis.

Screen 7: Example 3 shows how to perform a two-tailed hypothesis test using confidence intervals. Be sure to watch the StatCrunch solution video on the previous screen.

Screen 8: This exercise is based on Example 3 of the previous screen.

Objective 3 – Hypothesis Tests for p using the Binomial Distribution
You are not responsible for the material in this section. You can read through Screen 1 and watch the example on Screen 2, but you will not have to work any problems using this approach.

Screen 1: This screen explains how to use the binomial distribution when np(1-p) is not at least 10. Recall that we cannot use the standard p-value computation when that condition is not met.

Screen 2: Example 4 shows how to test hypotheses for p when the standard conditions are not met. Be sure to watch the StatCrunch video solution.

Screen 3: I deleted the exercise on this screen, so you should just see a blank screen.

Screen 4: End of Section