Section 3.4 IRA Guide

Introduction

Screen 1: List of Objectives

Objective 1: Determine and Interpret z-Scores

Screen 1: Definition of *z-scores*. Click on the link to watch the video that explains the formula. Note the mean and standard deviation of z-scores, as well as where to round them.

Screen 2: Example 1 shows how to compute z-scores as well as how to use z-scores to compare two values from different distributions. Watch the By Hand video solution.

Screen 3: This problem is based on Example 1. (You will have to compute the z-scores by hand.)

Screen 4: Read through this screen for some guidance on interpreting negative z-values.

Objective 2: Interpret Percentiles

Screen 1: Definition of *percentiles*. Be sure that you understand what the *k*th percentile, P_k, represents.

Screen 2: Example 2 explains how to interpret a percentile. Be sure to click through the approach and interpretation. There is no video solution for this example.

Screen 3: This problem is based on Example 2 on the previous screen, and will measure how well you understand the interpretation of percentiles.

Objective 3: Determine and Interpret Quartiles

Screen 1: Definition of *quartiles*. Of particular importance are the first quartile, Q1, and the third quartile, Q3. Be sure to watch the In Other Words video.

Screen 2: Click through the three steps for finding quartiles by hand. Although we will typically use StatCrunch for this, it is important that you know how to do this by hand as well in case you are given a large stem-and-leaf display because it will be easier to find quartiles by hand than it will be to type all of the values into StatCrunch.
Watch the Caution video and the In Other Words video.

Screen 3: Example 3 shows how to find quartiles from a set of data. I'd suggest watching the By Hand solution video so you can see how to do it by hand when it is more convenient. Also, be sure to watch the StatCrunch video solution so you can find quartiles using StatCrunch.

Screen 4: This problem asks you to interpret quartiles. You only get one guess at this multiple choice question, so be sure that you understand the meanings of Q1, Q2, and Q3.

Screen 5: This problem asks you to compute quartiles – you should use StatCrunch for this.

Objective 4: Determine and Interpret the Interquartile Range

Screen 1: Definition of *interquartile range*, as well as the formula for computing it by hand.

Screen 2: Example 4 shows how to compute the interquartile range by hand if you already know Q1 and Q3.

Screen 3: This problem is based on Example 4 on the previous screen – the quartiles are provided for you.

Screen 4: Carefully read through this summary about which measure of central tendency and dispersion to report. These concepts will appear in the homework so be sure that you understand.

Objective 5: Check a Set of Data for Outliers

Screen 1: This screen introduces the concept of outliers, which is very important. Watch the Caution video.

Screen 2: Click through the 4 steps for checking for outliers. StatCrunch does not do this for you, so make note of the formulas for the lower and upper fences.

Screen 3: Example 5 walks you through the steps for checking for outliers. Watch the By Hand video solution.

Screen 4: This problem is based on Example 5 on the previous screen.

Screen 5: End of Section