Research Methods 2

Week 4: Exercise Sheet 1

This sheet asks you to use Minitab to generate your own, artificial samples from a variety of populations. Although this might seem rather contrived, it is a useful technique to use when learning about statistical methods. This link will provide more explanation about what you are doing when using this method.

Question 1.

In Minitab, click on **Calc**, then **Random Data** then **Normal...**. You will then be presented with a dialogue box in which the I-beam is flashing in a box between the word **Generate** and **rows of data**. Type the number '100' (do not include the quotes) in this box. This instructed Minitab to generate 100 numbers. The next step is to tell Minitab where to store these once they have been generated. To do this click in the box labelled **Store in column(s):** and type the name of a spare column – if it is empty or its contents are unwanted, then C1 would do. This will place the 100 numbers in column C1. So far you have told Minitab to generate 100 numbers from a Normal distribution but *which* Normal distribution has not been specified until the values of the population parameters, μ and σ, have been given. By default Minitab assumes a mean of 0 and an SD of 1. However, you should use the mouse to highlight the value 0.0 in the **Mean:** box and type the number '10'. You should then do the same with the **Standard deviation:** box, replacing 1.0 with 2.0. Now click on **OK** and observe the contents of column C1 in the data window.

Use the methods from last week to plot a histogram. Repeat the exercise a few times, noting each time the similarities and differences in the histograms. Remember to note the range over which the data are distributed.

Question 2.

Repeat question 1, but instead of using a mean of 10 use 20.

Question 3.

Repeat question 1, but instead of an SD of 2, use 5.

End of Exercise Sheet 1