Technology Insight 2 - Normal Quantile Plot

Normal-Quantile plots are a great way of assessing the normality of a data set. The *theory* on how these plots are created is less important than interpreting at this point. Will look into the "why" later on in the course.

Let's make a normal-quantile plot for our data set of Exam 1 Scores:

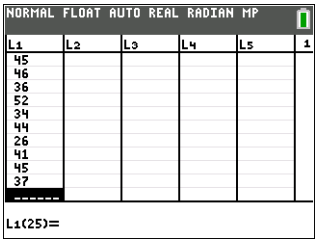
Exam 1 Scores

42 42 38 42 46 34 40 23 41 38 39 46 50 49 45 46 36 52 34 43
44 26 41 45 37

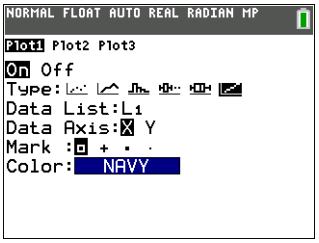
TI-84

To create a **normal quantile plot** (or quantile-quantile, or normal probability plot) on the TI -84:

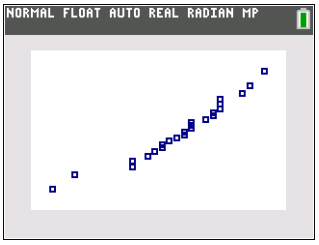
Step 1) Enter the raw data into the stat editor in L1 (stat enter). (The following shows the Exam 1 scores from section 2.1)



Step 2) Set up the Plot1 in the **statplot** menu (2nd y=). Select the last icon in Type. The Data List is the list where you have the data, and make the x-axis the Data Axis.



Step 3) Finally, press zoom 9:ZoomStat.



Since the points lie very close to a line, the data appear to be from a normally distributed population.

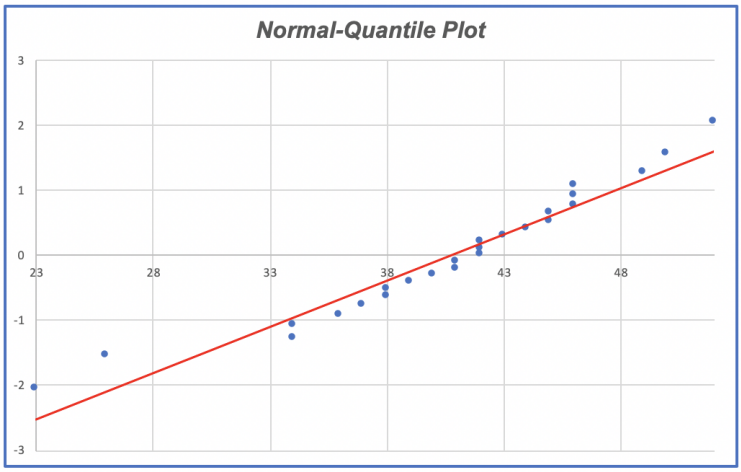
EasyStats

Step 1) Open EasyStats, and navigate to the Data Sets page; select the Exam Scores data, and copy (ctrl+c).

Step 2) Click on Index, and select Graphs Normal-Quantile

Step 3) Paste the data into the Data column (ctrl+v).

Step 4) Click on the **Rescale Axes** button.



StatCrunch

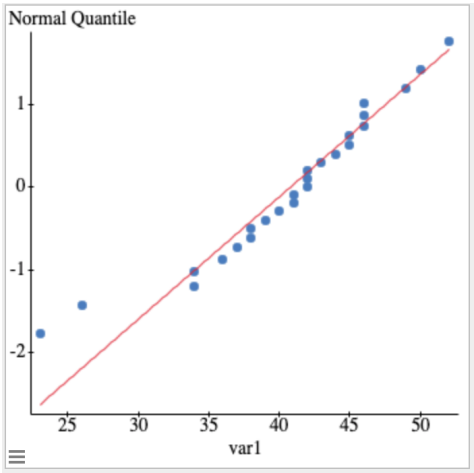
Open StatCrunch through MyStatLab

Step 1) Enter the data into var1.

Step 2) Select Graph, and **QQ Plot** (quantile-quantile plot)

Step 3) Click var1 and check the box for **Normal Quantiles on y-axis**

Step 4) Click **Compute!**



Example 1 Use one of the methods above and determine if the following small data set comes from a normal population. A histogram is completely worthless to assess normality with small data sets.

4 12 34 56 78 95