

## Making a Histogram Using Excel 2016

To demonstrate the procedure, we will make a histogram from the following frequency distribution of bachelor's degrees by age (adapted from Michael Sullivan, *Fundamentals of Statistics*, 2<sup>nd</sup> edition, Pearson Education, Inc. 2008, page 73).

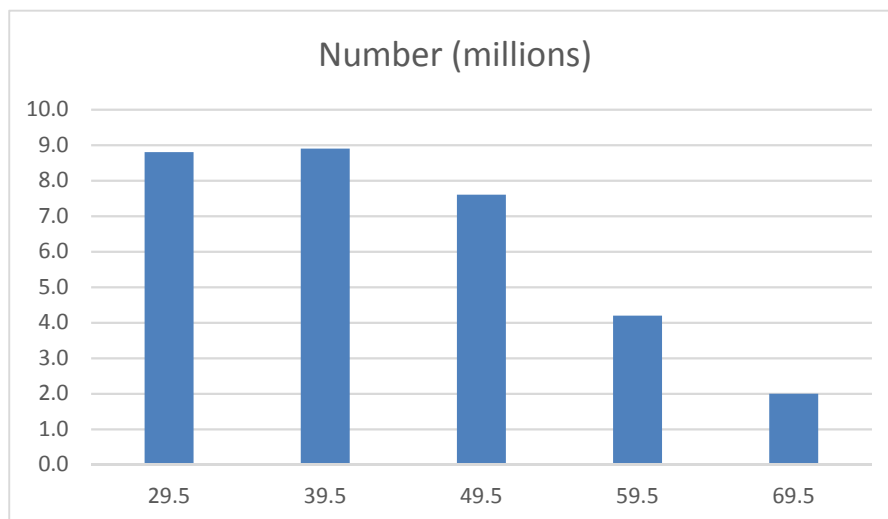
Age	Number (millions)
25 to 34	8.8
35 to 44	8.9
45 to 54	7.6
55 to 64	4.2
65 to 74	2.0

The first step is to find the class midpoints by adding the lower class limit to the upper class limit, and dividing the result by two. The resulting midpoints are: 29.5, 39.5, 49.5, 59.5, 69.5.

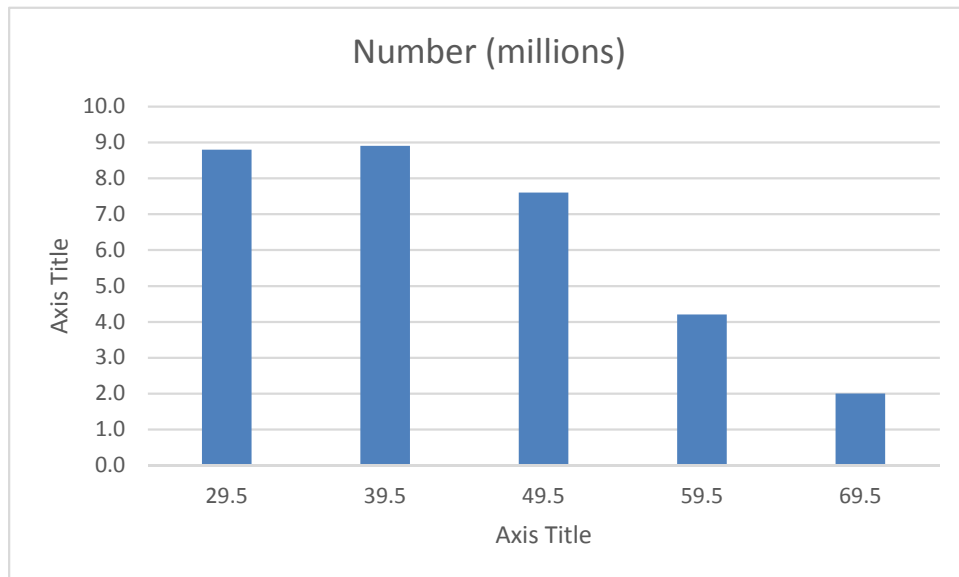
Now open up a blank worksheet in Excel 2013. Enter the class midpoints in column A under **Age**, putting an apostrophe (') before each number as you enter it. The leading apostrophe makes Excel think you are entering words instead of numbers. Enter the frequencies in column B under **Number (millions)**. Just enter regular numbers without the leading apostrophe. The result will look something like:

A	B
Age	Number (millions)
'29.5	8.8
'39.5	8.9
'49.5	7.6
'59.5	4.2
'69.5	2

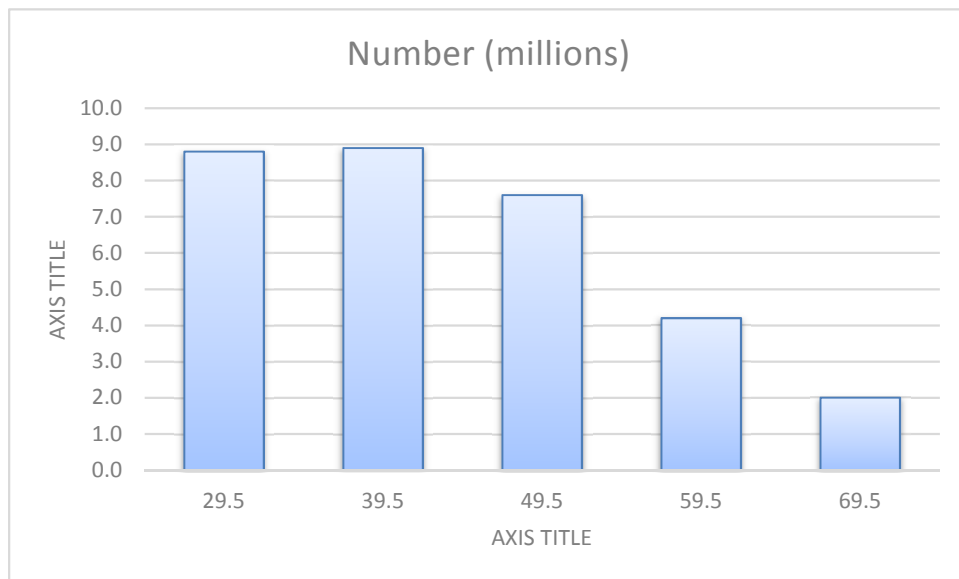
Next highlight everything you just entered and click on the *Insert* tab. Click on the *Insert Column or Bar Chart* icon and then click on *Clustered Column*, the first icon on the left under *2-D column*. You should see a graph like the following.



Click on the plus sign (+) to the right of the chart. Check the boxes next to *Axes*, *Axes Titles*, *Chart Title* and *Gridlines*. Your chart should now look like the following.



In the *Chart Tools* tab, click on the *Design* tab. Choose *Style 6*, the sixth bar chart style counting from the left. The chart should now look like the one below.



Next click twice on the chart title. If a new window appears, just close it. You should be able to edit the title now. Change the title to “Bachelor Degrees by Age”. Click off the title to save your changes. Do the same for the vertical and horizontal axis titles. Change the vertical axis title to “Number (millions)”. Change the horizontal axis title to “Age”.

Click on the *Home* tab at the top of the Excel window. Then click on the title of the graph. Change the font size to 12. The font size is the number at the top left of the window, just to the right of the box giving the font type. Font types are words or phrases like “Arial”, “Calibri (Body)”, “Franklin Gothic Medium”, “Myriad Pro” or “Times New Roman”.

The vertical axis needs a couple changes, so right click on it and choose *Format Axis*. Under *Axis Options* and *Bounds*, change the maximum to 9. Then click on *Number* and under *Category* choose *Number*. Change the number next to *Decimal places* to zero. Click on the “X” in the upper right hand corner to close the *Format Axis* window.

Now right click on the bars and choose *Format Data Series*. Make the *Series Overlap* 0% and make the *Gap Width* 0% also. Click on the “X” in the upper right corner to close the *Format Data Series* window.

Your histogram is now finished and should look like the one shown below.

