

Math 263: Excel Assignment 1

***Due Thursday January 23 in class or in Math Room 108 by 4 pm that day.
Hand in a paper print-out of your work.
Please don't email me the assignment. Thanks!***

You must do the computer work for this assignment yourself, although you may certainly talk to other people. Graphs or answers which appear to be copied will be treated as an integrity violation.

Special Excel Office Hours

If you aren't comfortable doing this in Excel, come to my office, Gould Simpson 823, with your laptop and we can do it together. I'll be there from 1 pm onward on Wed Jan 21.

Our UTA, Adrian G Carballeira (email: adrianc@email.arizona.edu) can also help you; he arranging office hours for Thursday.

Mac Users: You need to download and install StatPlusLE. (It's free!) See instructions on the blue part of my web page both for downloading the software and for making histograms

PC users: You will need to "wake up" the data analysis toolkit; instructions at back of this assignment.

1. The file *LifeExpectancy07.xlsx* contains the life expectancy from 181 countries from the United Nations Human Development Report from 2009. This data is gathered by the UN to construct the Human Development Index (HDI). The HDI is used by the UN to decide which countries most need what kind of aid.
 - (a) Construct a histogram showing the distribution of life expectancy across countries.

Instructions:

 - i. Use bins of width 5 starting at 45. (So your lowest bin will have 45 as its upper limit.) The top bin limit you need is 85.
 - ii. Label the axes properly to show clearly what each one represents in the context of life expectancy.
 - iii. Insert the data labels on each vertical bar.
 - iv. Increase the width of each bar so there is no gap between them. (If there are gaps, the graph is not considered a proper histogram.)

Note: Paste a copy of your histogram into your solutions. Instructions on how to make a histogram are at the end of the assignment.

- (b) Based on the data given and histogram, are the following statements true or false? Give reasons for your answers.
- i. “The tallest bar represents the fact that between 70 and 75 countries have a life expectancy of 49.”
 - ii. “More than half the countries represented have life expectancy of more than 70 years.”

2. Use the following commands:

Mean	=AVERAGE(array)
Median	=MEDIAN(array)
Standard Deviation	=STDEV(array)
Percentile Rank	=PERCENTRANK(array, US Life Expect)

- (a) Find the mean.
- (b) Find the median.
- (c) Find the standard deviation.
- (d) Find the percentile rank of the US life expectancy
- (e) Explain in word how the relationship between the mean and median relates to the shape of the graph.
- (f) Explain in words what the percentile rank of the US life expectancy tells us.

How to Make a Histogram in Excel 2007 or 2011 on a PC

1. Make sure Data Analysis shows up on the Data ribbon. If it does not,
 - Click the office icon to the left of the home ribbon
 - At the bottom of the menu, click Excel options
 - From the left list, choose Add-Ins. You see a long list of active Add-Ins and inactive Add-Ins.
 - From the very bottom of the window, select the Manage Drop down box and then choose Excel Add-Ins, Click Go.
 - In the Add-Ins dialog, choose the Analysis Toolpack and Analysis ToolPak –VBA check box. Click OK

You will only need to do this once. Data Analysis should show up on the Data ribbon which is on the main menu.

2. Type in the bin limits you would like to use in a vertical column. It is usual to have about ten bins, including most of the data, and with “nice” limits.
3. Go to Data Analysis. A dialog box will open; select Histogram. Another dialog box will open.
4. In the Histogram dialog box,
 - In first Range is the data you want to put into bins.
 - Bin Range is the bin limit you typed in.
 - Don’t check Labels unless you selected the labels in the two ranges above.
 - Output range is the top left corner of where you would like the data put.
 - If you want a chart, check the box. (You can also make one later.)
 - Click OK.
5. To add titles or data labels, click on the chart, then go to the Layout menu and select.
6. To widen the bars and remove the gap between them, right click on one of the bars and Format Data Series.
7. Excel’s Histogram program will only make a frequency histogram. If you want a relative frequency histogram, you have to calculate the relative frequencies first and then make a graph.