Math Stat 465

Minitab instructions (Version 14 for Windows)

Minitab is available on most campus computers, and can be rented or purchased cheaply through an online service – see the Stat 465 webpage for details.

Getting acquainted: After opening Minitab, note the split screen.

Upper screen: Session window (for commands and output)

Lower screen: Worksheet window (spreadsheet). Note: columns are labeled `C1, C2,` etc.

Clicking on either will make it active for use. Hold the mouse on top bar of session window and slide window around. Ditto for the worksheet. (Stuff sometimes gets hidden behind them.)

[Try the "maximize" icon at right for either window. To retrieve the "minimize" icon, use the mouse to find the SESSION WINDOW icon at top, and click.
Try clicking on the various menu options along the top of the screen.]

Entering data manually: Click on the worksheet and enter data as you wish. Or use any number of special commands. For example:

- `Calc > Random data > Bernoulli >`
  `Number of rows: 10`
  `Store in column: C1`
  `Probability of success: .5`
  `OK` (You have now tossed a fair coin 10 times.)
  (Optional: `Data > Code > Numeric to text >` to change 1 to H and 0 to T.)

- `Calc > Make patterned data > Simple set of numbers >`
  `Store patterned data in: C2`
  `From: 1`
  `To: 5`
  `In steps of: 1`
  `List each value: 2` (times)
  `List the sequence: 3` (times)
  `OK`

Opening existing worksheets: Put the data disk in the CD drive. To get data from the disk while in Minitab:
`FILE > OPEN WORKSHEET`; window opens. Find the drive with the CD.
`DATA > MINITAB > CH01 >`
`exmp1-01.mtw > Open`
opens the data of Example 1.1 (pages 4–5). Data should now be in the worksheet.
The prefix "`exe`" denotes a problem, while "`exmp`" denotes an illustrative example.

Printing: To print the session window or the worksheet, click on it if necessary, then go to the PRINT icon (or `FILE > PRINT`). If you highlight part of the session window first, only the highlighted part will print. (Trick: Highlight a few characters, hold down SHIFT, scroll down to some point and click the mouse. This highlights a large section.)

Creating a Word document containing your output, use the mouse to highlight what you want copied, then click on `EDIT > COPY`. (Graphs can't be highlighted; just click on the graph and do `EDIT > COPY`.) This stores the output on your "clipboard." Now open Word (find the icon) and enter `EDIT > PASTE` in Word. You can now edit the Word document, print it, and save it.

Leaving Minitab: You get the option of saving your project, or to save just the worksheet. You don't have to. If you do, you get to name the project (with the `.mpj` extension – for example, "`binomial.mpj`"). You may also just save the worksheet. Whatever you do, **please save your work on your own disk or flash drive, or on the X-drive.** After closing Minitab, **REMEMBER TO LOG OFF!!**

Examples 1.1 and 1.6: O-ring data

Stem-and-leaf plot : Let's reproduce Figure 1.1 (Example 1.1, pages 4–5).

`Graph > Stem-and-Leaf >`
`Graph variables >` (click on the column with the data, or write it in)
`OK`

Histogram For the same data, try something similar:

`Graph > Histogram >`
`Simple >` (double click, or click `OK`)
`Graph variables >` (click on the column with the data, or write it in)
`OK`

It doesn't look the same as in the text, does it? The reason is the "cutpoints" between bars. To change them:

Double-click on the x-axis (or single-click and then right-click), and select

`Binning >`
`Cutpoint`
`Midpoint/Cutpoint positions:` (enter) `25, 35, 45, 55, 65, 75, 85`
`OK`

You can similarly change other aspects of the graph (e.g., click on the word "Frequency" along the vertical axis to change it to "Percent").

Dotplot To reproduce Figure 1.5, page 12 (the same data set), use the `Graph > Dotplot` menu. Again the cutpoints are different from those in the text, but this is not an issue of "binning" (grouping) but simply of display. As before, double-click on the x-axis and choose

`Scale >` (if not already selected)
`Position of ticks:` (enter) `30, 40, 50, 60, 70, 80`
`OK`

Example 1.16: Corrosion data

Boxplot or box-and-whiskers plot. To reproduce Figure 1.17, page 38, read in `exmp1-16`. Then:

`Graph > Boxplot >` (choose) `One Y, Simple >`
(choose) `Depth`

To make the plot horizontal, double-click on either axis and choose
`Scale >` (this may already be chosen)
(choose) `Transpose value and category scales`

Descriptive statistics For the same data, reproduce Figure 1.18, page 39:

`Stat > Basic statistics > Display descriptive statistics >`
`Variable: Depth`
`Statistics >` (choose the statistics in Figure 1.18, and uncheck any others)
(click `OK` in both windows).

Note: In the above exercise we have opened two worksheets. Note that the command menu will assume that you want to work on the "live" worksheet. If the worksheet you want is not live, click on it before executing commands.

And again: After closing Minitab (and other applications), **REMEMBER TO LOG OFF!!**

The National Council of Teachers of Mathematics has an interesting web page for playing with sample means and medians:
`standards.nctm.org > Overview > E-Examples >` and scroll down to
`6.6: Comparing Properties of the Mean and the Median`. The live link is on the Stat 465 webpage.