

Introduction to Excel 2007

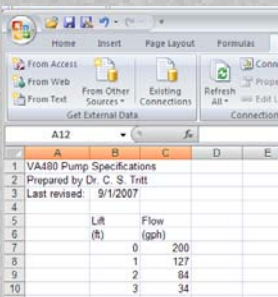
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Introduction

- Engineers and nurses often use spreadsheets to perform routine calculations and produce simple plots.
- Excel is Microsoft's popular spreadsheet and the one we use at MSOE.
- All spreadsheet programs are pretty much the same.

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Sample Spreadsheet



	Lift (ft)	Flow (gph)
1	VA180 Pump Specifications	
2	Prepared by Dr. C. S. Tritt	
3	Last revised: 9/1/2007	
4		
5		
6		
7	0	200
8	1	127
9	2	84
10	3	34

Numbers or text can be entered into "cells."

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Entering Equations

Contents of cell E7

Equations should start with =\'s and may contain "references" to other cells.

1	VA480 Pump Specifications				
2	Prepared by C. S. Tritt				
3	Last revised 7/25/04				
4					
5		Lift	Flow	Lift	Flow
6		(ft)	(gph)	(m)	(m ³ /s)
7		0	200	0	0.00027
8		1	127	0.304801	0.000134
9		2	84	0.609601	8.83E-05
10		3	34	0.914402	3.59E-05
11					
12	Conversion factors				
13					
14		39.37	in/m		
15		264.17	gal/m ³		
16		1.00E+06	ml/m ³		
17					

Equation Details

- Equations can contain numerical values, mathematical operations, cell references and special functions.
- Cell references generally consist of column letter and row number values.
- By default reference are "relative" but can be made absolute by pressing F4 or putting \$'s in front of coordinates.

Formatting Cells

- Engineers care about the number of digits displayed in values. The convention is that there is uncertainty in the right most digit.
- The digits shown (including the uncertain one) are called *significant*.
- To adjust the number of digits displayed (and align decimal points) in Excel, select the cells, right click and selection *Format cell... | Number*

Formatted Cells

	Lift (ft)	Flow (gph)	Lift (m)	Flow (m ³ /s)	Flow ml/min
7	0	200	0.000	2.10E-04	1.26E+04
8	1	127	0.305	1.34E-04	8.01E+03
9	2	84	0.610	8.83E-05	5.30E+03
10	3	34	0.914	3.58E-05	2.15E+03

"Scientific Format"

Producing Plots

Pre-selected Columns

Plot Steps

- Select Columns.
- Select Insert tab and Scatter in the Chart group.
- I put each plot on a *new sheet* (use the move chart button).
- Tidy-up the plot by select items (double clicking on them) and changing their properties.

Tidying Tasks

- Remove legend (since there is only one data series).
- Select and right click on the x (horizontal) axis and specify Major Gridlines.
- Specify axis titles with units (and sometimes a chart title) using the Layout tab that appears when a chart is selected.
- Add initials and date using Insert | Text Box.
- Adjust Data Series Format (appearance)

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Chart Tools Tabs

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Finished Chart

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