

GRAPHING A SYSTEM OF EQUATIONS

Step 1

Input the *YEARS* data in column A as *years since 1960*.

Skip columns B and C for now. (They will be used later when graphing. The columns will convert the men's and women's times into seconds)

Input the Men's times as follows: Minutes in column D and seconds in Column E as shown.

Input the Formula to convert the time into seconds in Column B as shown.

	A	B	C	D	E	F	G	H	I	J
1	Years since 1960	Time in seconds								
2	0	=60*D2+E2		2	10.3					
3	4			2	3.4					
4	8			2	2.96					
5	12			1	59.38					
6	16			1	55.44					
7	20			1	58.36					
8	24			1	52.06					
9	28			1	54.81					
10										
11										
12										
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22										

Input the Woman's times in column F (minutes) and G (minutes) and the formula in Column C as shown:

	A	B	C	D	E	F	G	H
1	Years since 1960	Time in seconds (men)	Time in Seconds (Woman)					
2	0	130.3	=60*F2+G2	2	10.3	2	22.6	
3	4	123.4		2	3.4	2	22.4	
4	8	122.96		2	2.96	2	20.85	
5	12	119.38		1	59.38	2	16.58	
6	16	115.44		1	55.44	2	10.95	
7	20	118.36		1	58.36	2	3.42	
8	24	112.06		1	52.06	2	0.68	
9	28	114.81		1	54.81	2	5.87	
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REMEMBER: The data graphed **MUST** be in consecutive columns

Answer Question 1 on a separate sheet.

Step 2

Hi-lite the data in Columns A, B, and C.
Select the Chart Wizard and select the *XY Scatter* option
Select the top option (Scatter plot of just data points)
Follow the *next* button and put in titles and headings when prompted.
You may even elect to show the *x, y* labels on the points
At the finish, save the chart as NEW SHEET and give the chart a name.

ANSWER QUESTION 2 ON SEPARATE SHEET

Step 3

While looking at the chart, right click a point on the Men's scatter plot and select ADD TRENDLINE.
Select the type as linear.
Select the options tab and click "*Show equation on Chart*"
NOW Click OK.

REPEAT for the Women's scatter plot.

ANSWER QUESTIONS 3 – 6 ON THE SEPARATE SHEET.

Step 4

To find the year of intersection on the graph right click the whole trend line (NOT THE POINTS)
Select *Format Trend Line*
Go to the *Options Menu* and forecast forward 10 more years than the number of years (units) you predicted in question 4.
Repeat these steps for the women's trend line.

ANSWER QUESTIONS 7 - 10 ON THE SEPARATE SHEET.

Step 5

Repeat the steps to graph the data for questions 11 and 12.