

How to Do Page 21 #28 Using Microsoft® Excel

1. Open Microsoft® *Excel* spreadsheet software on your computer.
2. Save your file before you begin.
 - Click on File, then Save As.
 - Save the file using a filename of your choice.
3. Enter the titles of the columns.
 - Click on cell A1 and enter n .
 - Click on cell B1 and enter T_n .
 - Click on cell C1 and enter **First Term**.
 - Click on cell D1 and enter **Common Difference**.
4. In the first column, enter values of n from 1 to 19.
 - Type **1** into cell A2.
 - Create a formula to copy into the 18 boxes below by clicking on cell A3 and typing $=A2 + 1$.
 - To copy this formula, left-click (and hold down) on cell A3 and then drag the cursor so cells A3 to A20 are highlighted. Then, hold down the Ctrl key while typing **d**. (This is equivalent to choosing Edit → Fill → Down.)
 - The “ n ” column should now contain the numbers 1 to 19.
5. Complete the remaining columns. See Figure 1.
 - Click on cell C2 and enter an integral value for the first term, such as **8**.
 - Click on cell D2. Enter an integral value for the common difference, such as **4**.
 - Click on cell B2 and enter the formula $=\$C\$2 + (A2 - 1) * \$D\2 . This is the formula of the general term $t_n = t_1 + (n - 1)d$. The program should place a value of 8 into cell B2.

	A	B	C	D
1	n	T_n	First Term	Common Difference
2	1	8	8	4
3	2			
4	3			
5	4			
6	5			

Figure 1



Name: _____

Date: _____

TM 1-4
(continued)

- To copy this formula to the cells below, left-click (and hold down) on cell B2. Then, drag the cursor so cells B2 to B20 are highlighted. Hold down the Ctrl key while typing **d**. The cells in column B should now be a sequence having a first term of 8 and common difference of 4. See Figure 2.

	A	B	C	D
1	n	T _n	First Term	Common Difference
2		1	8	4
3		2	12	
4		3	16	
5		4	20	
6		5	24	
7		6	28	
8		7	32	
9		8	36	
10		9	40	
11		10	44	
12		11	48	
13		12	52	
14		13	56	
15		14	60	
16		15	64	
17		16	68	
18		17	72	
19		18	76	
20		19	80	

Figure 2

6. Create a scatterplot by selecting the following, as shown in Figure 3.

- Under the Insert menu, select Chart. This will open the Chart Wizard.
- Select XY (scatter) as the type of chart you wish to insert.
- Under Chart sub-type, select the scatterplot (top icon showing no points connected).
- Click on Next >.

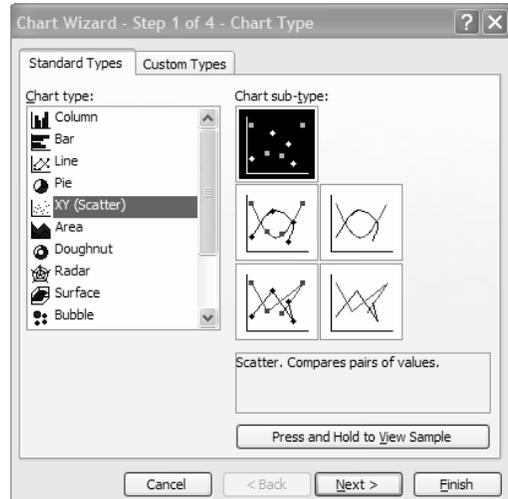


Figure 3



7. Enter the data range.

- In the main body of the spreadsheet, a flashing rectangle will appear around all cells that have data in them.
- Click in the spreadsheet and redraw the rectangle to include only cells that form the sequence. These are cells A2 and B2 and down to cells A20 and B20. See Figure 4.
- Click Next >.

	A	B	C
1	n	T_n	
2	1	8	
3	2	12	
4	3	16	
5	4	20	
6	5	24	
7	6	28	
8	7	32	
9	8	36	
10	9	40	
11	10	44	
12	11	48	
13	12	52	
14	13	56	
15	14	60	
16	15	64	
17	16	68	
18	17	72	
19	18	76	
20	19	80	
21			

Figure 4

8. You may wish to name the chart and provide labels for the x -axis and y -axis. See Figure 5. For example, enter **Sequence** for the chart title, **Term Number** for the Value (X) axis, and **Terms** for the Value (Y) axis.

- Click Next >.

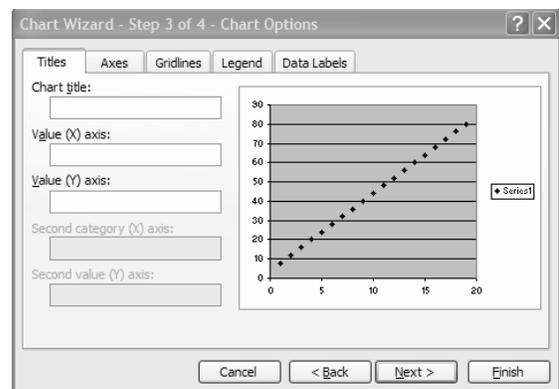


Figure 5

- Place the chart by selecting “As object” in “Sheet 1”. See Figure 6.

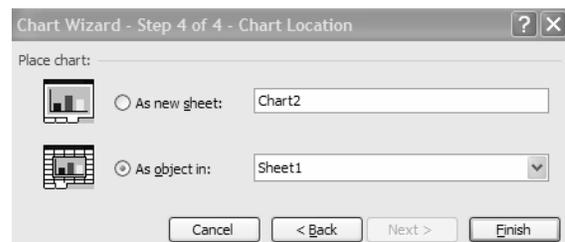


Figure 6



- Click Finish and your chart will be placed in the spreadsheet, as shown in Figure 7.

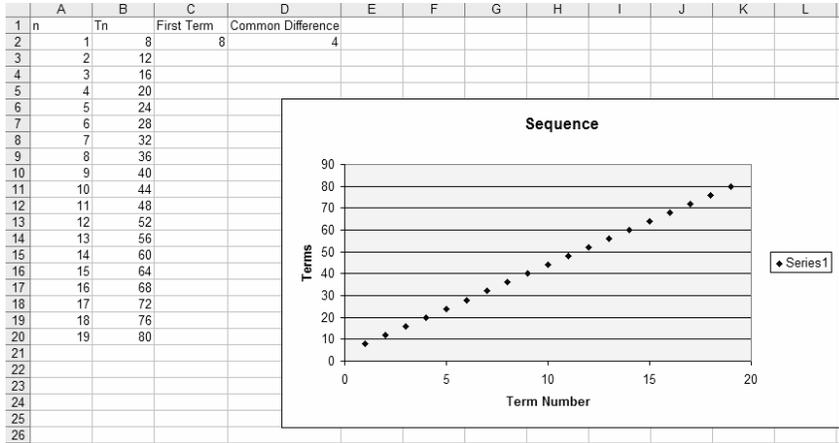


Figure 7

9. Add a slider to change the value of the first term.
- Click on the View menu from the toolbar.
 - Select Toolbars.
 - Select Control Toolbox, as shown in Figure 8.

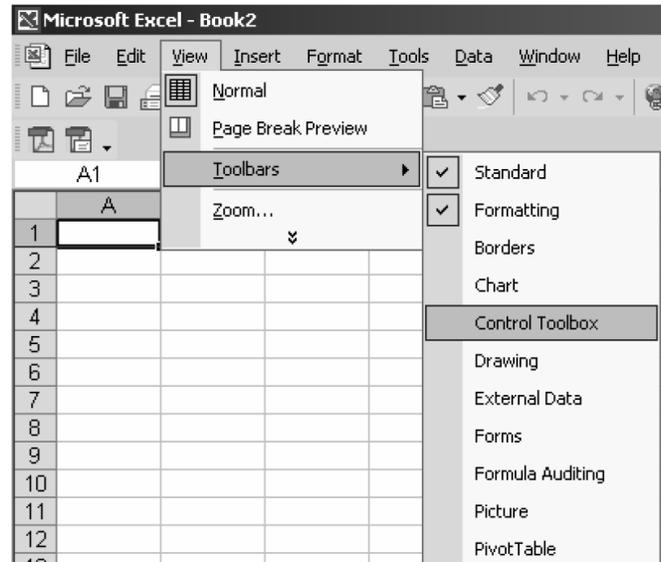


Figure 8

- In the Control Toolbox, click on the top left icon to enter “Design Mode.”
- Then, click the “Scroll Bar” icon. See Figure 9.
- Move off the control toolbox and the cursor will change to a “+”. Move it to where you wish to insert your scroll bar and click. Hold down the left-click button and drag the slider to the desired size.

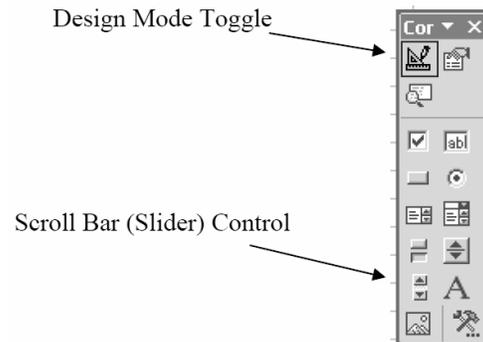


Figure 9

Name: _____

Date: _____

TM 1-4
(continued)

- Right-click on the slider and select Properties.
 - Enter the following properties for your slider.
SmallChange = 1
Min = 0
Max = 20
LinkedCell = C2
This sets the slider to change cell C2 from 0 to 20 in increments of 1.
 - To check that your slider is working, click into the Control Toolbox and click on the top left icon to exit Design Mode. Test your slider.
- 10.** Add a slider to change the values of the common difference.
- Repeat step 9 but set LinkedCell = D2.
 - Close the Control Toolbox.
 - Use the sliders to change the first term and the common difference. Notice that both the numbers in the columns and the graph change.
- 11.** Save your file before exiting.

