Excel Solution: Graph TR Equation

Graph the equation $TR = 30Q$ using Excel. The capacity for the period is 150 units.

Step 1: Set a table of values for *Q* and *TR*.

The *Q* values go from a minimum of 0 to a maximum of 150 as requested by the question. Use an increment of 150 ÷ 10 = 15 to ensure a nice spread of 10 values in your table.

In cell A1 type "Quantity, *Q*".

In cell A2 type 0 and in cell A3 type 15.

Highlight the two cells A2:A3 and copy down until you reach the value 150. To create the sequence, point your cursor at the bottom right corner of the highlighted range. The shape of the cursor changes to thin plus sign. Release your cursor when you reach the desired value. In this case, the value 150 is reached in cell A12.

In cell B1 type the heading "Total Revenue, *TR*".

In B2 enter the formula that calculates the total revenue for every value in the quantity column:
= 30*A2
Once you press enter you should get the value 0 displayed in cell B2.

Copy the formula from B2 all the way down to B12.

Your table should look like this:

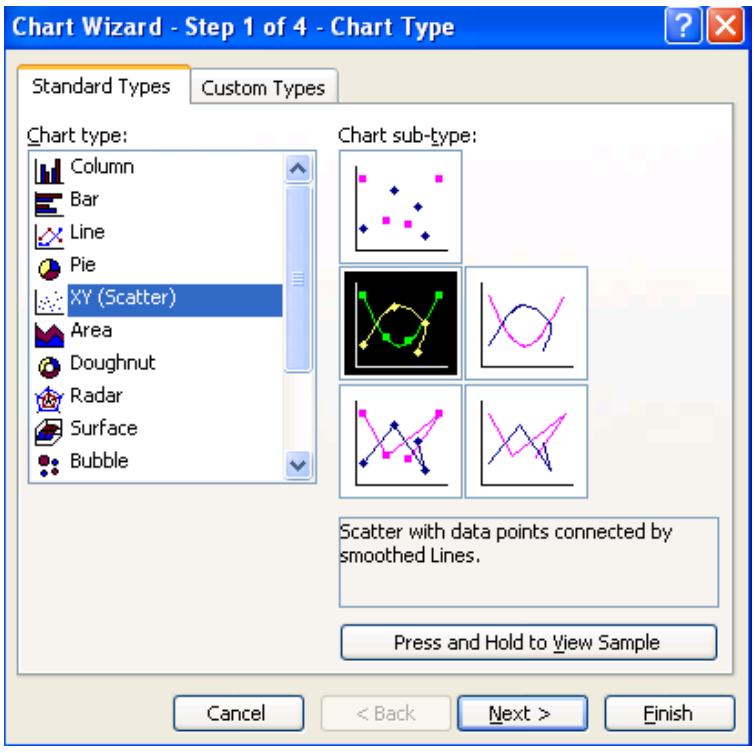
Quantity, Q	Total Revenue, TR
0	0
15	450
30	900
45	1350
60	1800
75	2250
90	2700
105	3150
120	3600
135	4050
150	4500

Step 2: Create a graph of the table values obtained in step 1.

Highlight the entire table range A1:B12.

Click on the Chart Wizard icon. 

Choose the XY (Scatter) graph as outlined below.

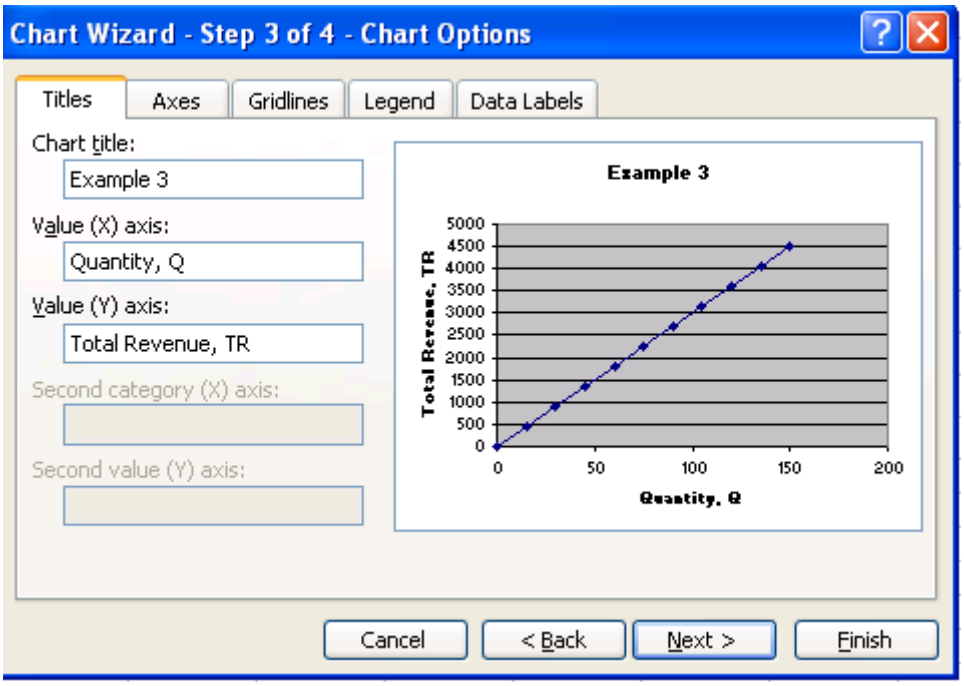


Click on the Next tab  twice.

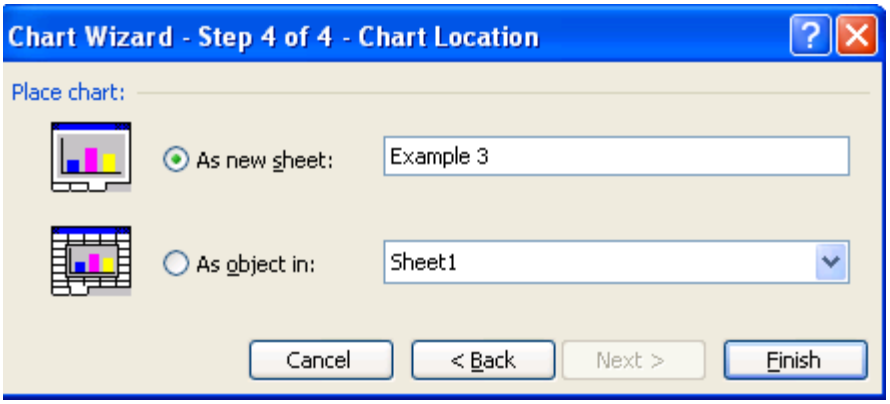
Click on the Legend tab and deselect the show legend. There is no need for the legend when graphing a single line.

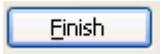
Click on the Gridline tab and remove all gridlines. Select major gridlines when reading off values from your graph, otherwise there is no need for them.

Enter graph titles as shown below:

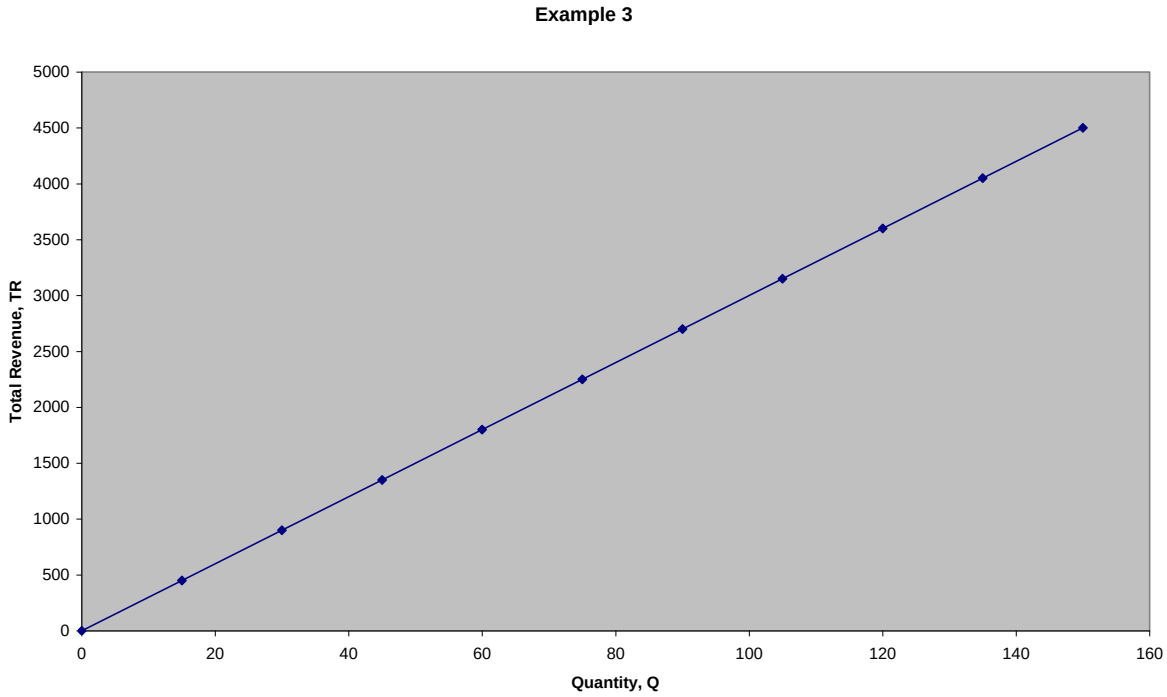


Click on next and choose “As new sheet” button and type the name of the graph sheet.

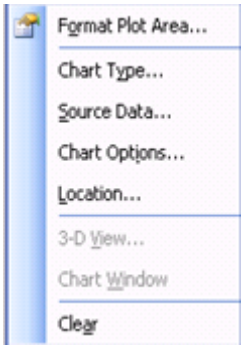


Click on the Finish button  to see your graph.

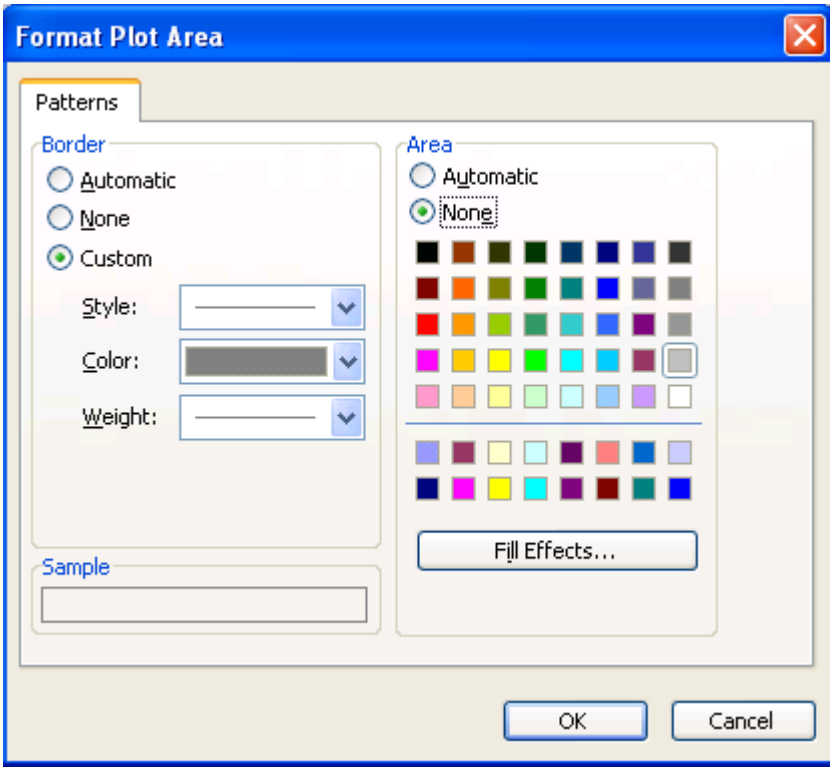
By now, your graph looks something like this:



To improve the look of the graph, change the background from grey to none. Right click inside the graph area to get the menu below.

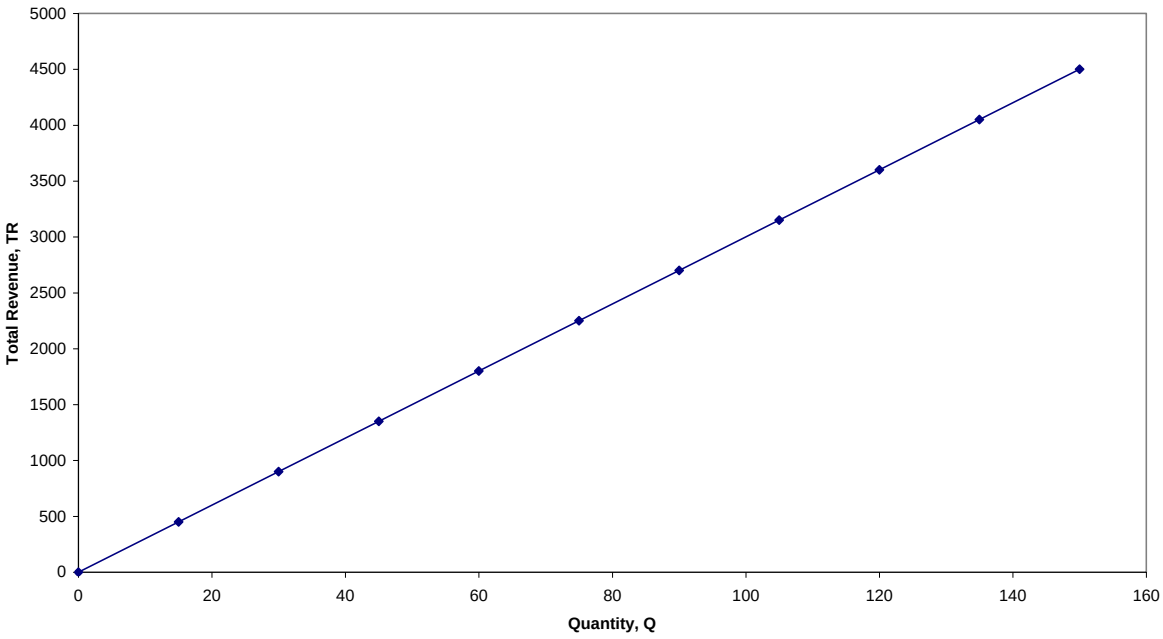


Choose Format Plot Area and choose None in the Area section.



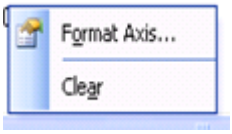
The background of the graph turns to white.

Example 3

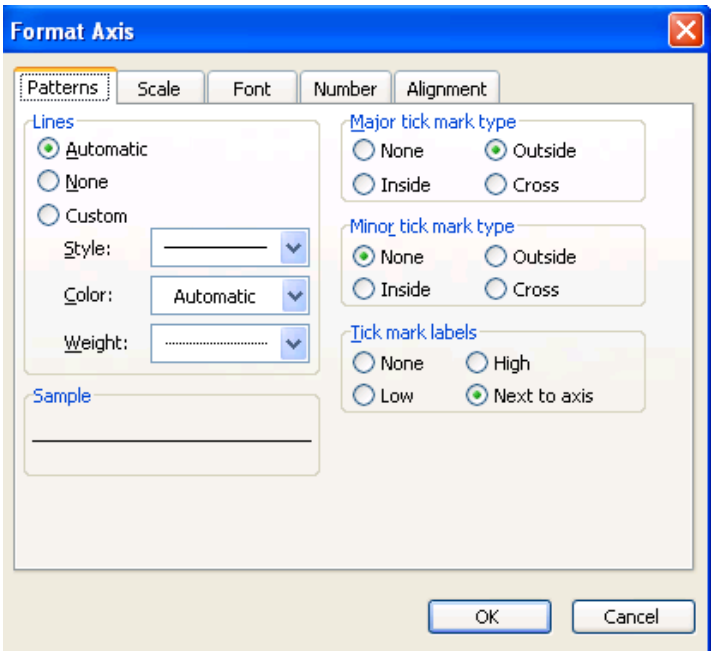


Now we have to change the scale on the *x*-axis to match the table values for *x* and to specify the maximum *x* value at 150.

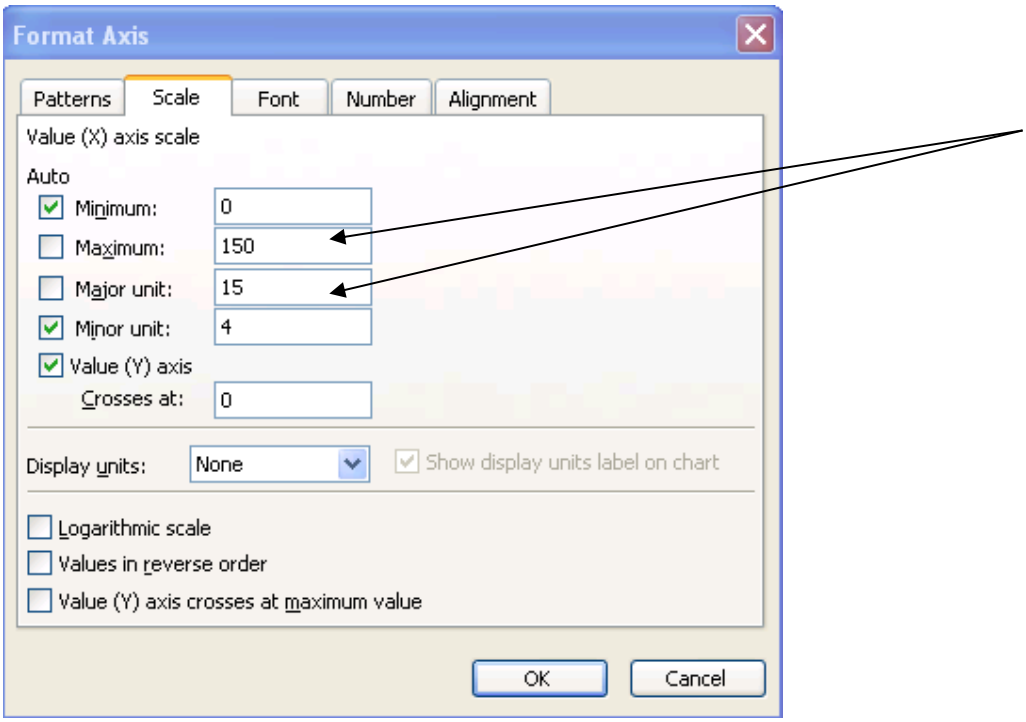
Right click on any of the numbers under the *x*–axis to get the following menu:



Choose Format Axis. Another menu pops up.



Choose the Scale tab and change Maximum from 160 to 150 and Major unit from 20 to 15:



Now your final graph should look like this: