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 $150 \div 10 = 15$ 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.

Chart Wizard - Step 1 of 4 - Chart Type
Chart Wizard - Step 1 of 4 - Chart Type Standard Types Custom Types Chart type: Chart sub-type: Column Chart sub-type: Chart sub-type: Chart sub-type: Chart sub-type: Chart sub-type: Chart sub-type: Chart sub-type: Surdace Chart sub-type:
smoothed Lines.
Press and Hold to <u>V</u> iew Sample
Cancel < Back Next > Finish

Click on the Next tab

Nextwice.

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

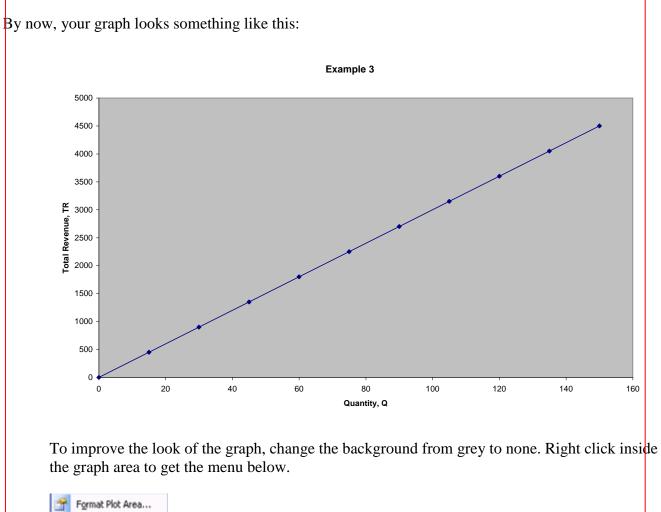
Click on the Gridline tab and remove all gridlines. Select major gridlines when reading off values from your graph, otherwise there is no need for them.

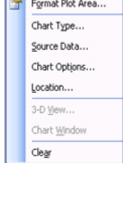
Enter graph titles as shown below:

Chart Wizard - Step 3 of 4 - Cl	hart Options	?×
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Value (Y) axis: Total Revenue, TR	3500 3000 2500 4 2000	
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Second value (Y) axis:	0 50 100 150 Quantity, Q	200
Ca	ancel < <u>B</u> ack <u>N</u> ext > <u>F</u> in	ish

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

Chart Wizard - Step 4 of 4 - Chart Location 🛛 🔹 🛛 🤅		
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lick on th	e Finish button	Einish to see your graph.
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Choose Format Plot Area and choose None in the Area section. × Format Plot Area Patterns Border Area 🔘 A<u>u</u>tomatic O Automatic 💿 Non<u>e</u> O<u>N</u>one 💽 Custom Style: $\underline{\subset}$ olor: Weight: Fill Effects... Sample OK Cancel The background of the graph turns to white. Example 3 5000 4500 4000 3500 **Total Revenue** 2500 2000 1500 1000 500 0 20 40 60 80 100 120 0 140 160 Quantity, Q

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.

Lines Automatic None Custom Style: Color: Automatic Weight: Sample Minor tick mark type None Outside Inside Cross Minor tick mark type None Outside Inside Cross Minor tick mark type None Outside Inside Cross Iick mark labels None High Low Next to axis	ormat Axis Patterns Scale Font N	umber Alignment
	Lines Automatic None Custom Style: Color: Automatic Weight: V	Major tick mark type None Outside Inside Cross Minor tick mark type None Outside Inside Cross Tick mark labels None High

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

Auto Minimum: 0 Maximum: 150 Major unit: 15 Minor unit: 4 Value (Y) axis Crosses at: 0	ormat Axis	×
Auto Minimum: Maximum: Maximum: Mayor unit: Major unit: Major unit: Minor unit	Patterns Scale	Font Number Alignment
 Minimum: 0 Maximum: 150 Major unit: 15 Minor unit: 4 Value (Y) axis Crosses at: 0 Display units: None Show display units label on chart Logarithmic scale Values in reverse order Value (Y) axis crosses at maximum value 	Value (X) axis scale	
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OK Cancel		
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