

Excel Unit Test TECH 1010

You have 55 minutes to complete ALL Three Parts, after that time points will be deducted. Read the instructions carefully and follow them precisely. At the end of time, submit the test via the online submission tool as an .xlsx file and a printout of all sheets.

Sheet 1 – XY Scatter Plot:

Create a spreadsheet that generates the points on two sin waves defined by the following equation:

$$y_x = a\theta \sin(\theta^2) + b$$

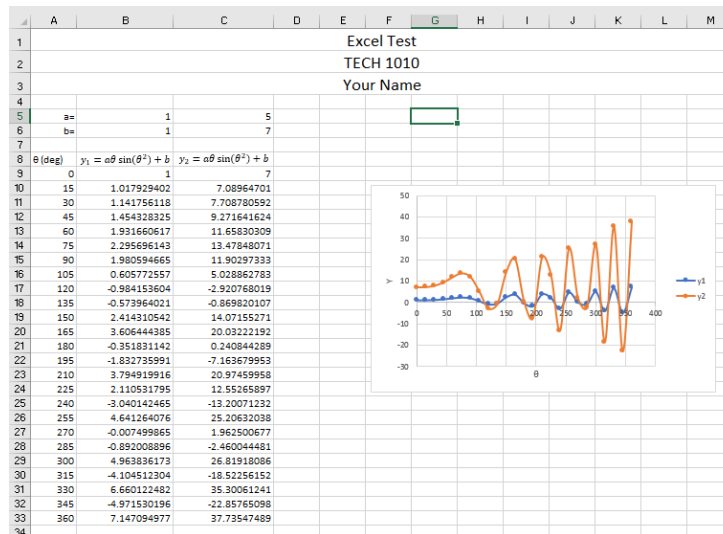
Where θ is 0 to 360 degrees in 15 degree increments. Values “a” and “b” are cells (and formula should allow copying from any cell and still function (\$ required)).

Column A should be your θ in **degrees**, and column B should be y. Remember you need to convert θ to radians.

The function should be plotted on an XY graph with X being your θ values and Y being the calculated value (y_x). Label x, y axis and turn on legend.

Label the spreadsheet as shown below (Font Calibri 18). Make sure to use MERGE to center the headings.

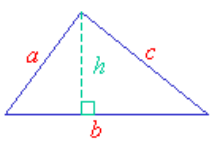
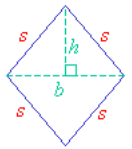
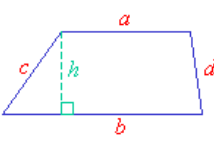
The final sheet should look similar to:



Name the sheet “Graph” and set the sheet to print Landscape and on one sheet (centered vertically and horizontally).

Sheet 2 - Area

Given that¹:

 <p style="color: red; font-weight: bold;">Area of a triangle = $\frac{1}{2}bh$</p>	 <p style="color: red; font-weight: bold;">Area of a rhombus = bh</p>	 <p style="color: red; font-weight: bold;">Area of a trapezoid = $\frac{1}{2}(a+b)h$</p>
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Create a spreadsheet that will calculate the area of each shape, given cells that contain the values for b, h, a and b as shown below (use cell location, not values in ALL calculations).

Spreadsheet should look like:

	A	B	C	D
1	Excel Test			
2	TECH 1010			
3	Your Name			
4				
5	b=	10 inches		
6	h=	15 inches		
7	a=	14 inches		
8				
9				
10	Area			
11	Triangle	75 sq in		
12	Rhombus	150 sq in		
13	Trapezoid	180 sq in		
14				
15				

b, h, a, area, triangle, rhombus and trapezoid are all bold. Area is centered in cell. b, h and a are all right aligned and all units are left aligned.

Use formulas to calculate the areas.

Label the spreadsheet as shown below (Font Calibri 11 BOLD). Make sure to use MERGE to center the headings.

Rename the sheet to Area

Set the sheet to print Portrait and center vertically and horizontally on the sheet.

¹ <http://www.onlinemathlearning.com/areas-of-polygons.html>

Sheet 3 – Parts List:

This sheet is a parts order for electronic components. The Total column is calculated by the following formula:

$$Total = Price Per * Qnt$$

Sum the column as shown.

Generate the spreadsheet as follows (expanding columns where appropriate)

	A	B	C	D	E
1	Excel Test				
2	TECH 1010				
3	Your name				
4					
5	Part No	Description	Price Per	Qnt	Total
6	155740	Deg C Temp Sensor	\$1.49	10	\$14.90
7	38239	2N2222a Transistor	\$0.89	20	\$17.80
8	32993	TIP 120 Darlington Pair	\$0.39	20	\$7.80
9	2129334	ATMega328P w/Arduino Boot Loader	\$4.49	10	\$44.90
10					
11				Total	\$85.40
12					

Copy the parts list below the original and sort by Part Number (Lowest to highest) so that you have both the original and the sorted list on one sheet.

Label the spreadsheet as shown below (Font Calibri 11 BOLD). Make sure to use MERGE to center the headings.

Rename the sheet "Parts list"

Set the sheet to print Landscape and center the sheet horizontally on the page.