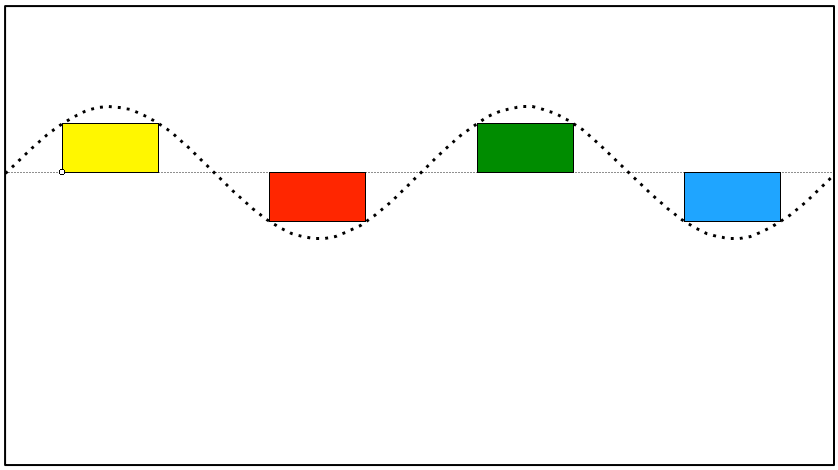
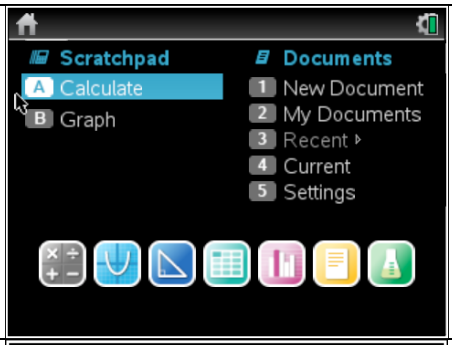
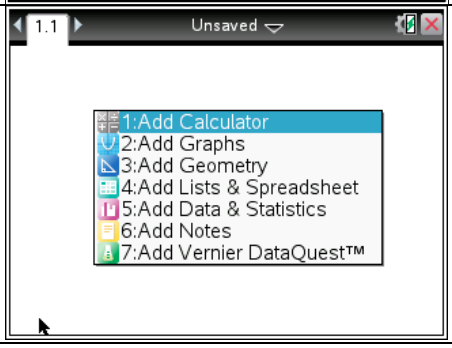
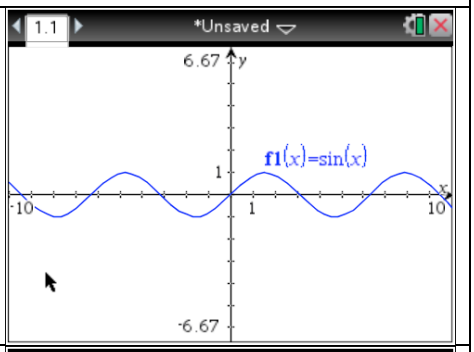
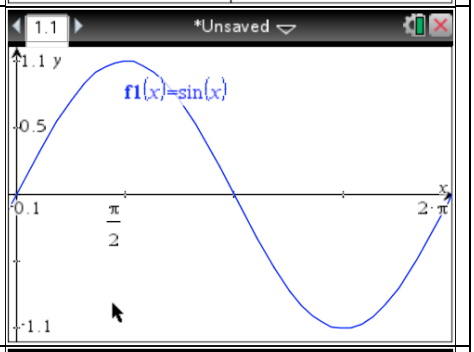
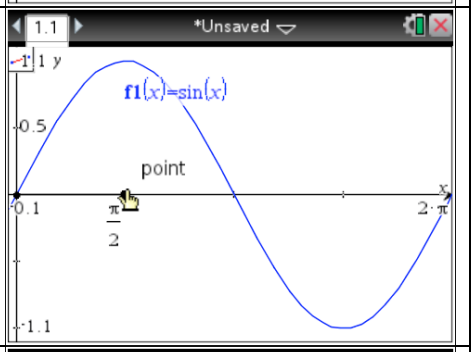
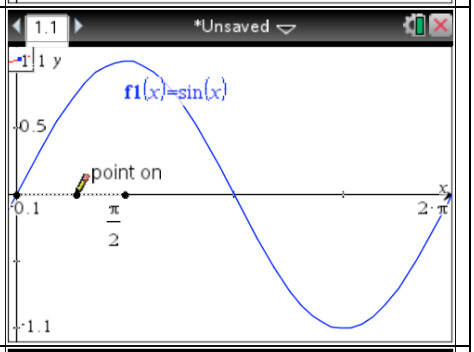
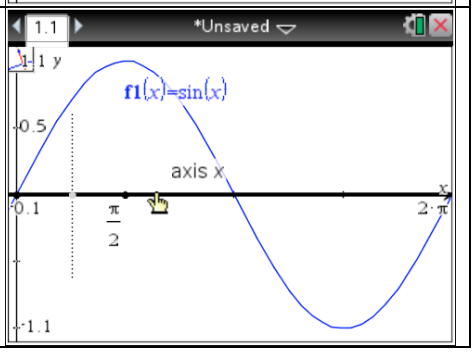
Corridor Gallery Design:
An interior designer is given a task to design a wall along a corridor in an art school so that students' art pieces maybe displayed.

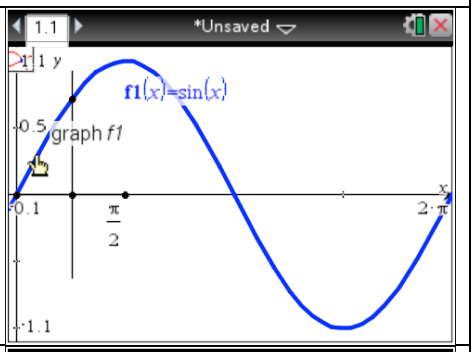
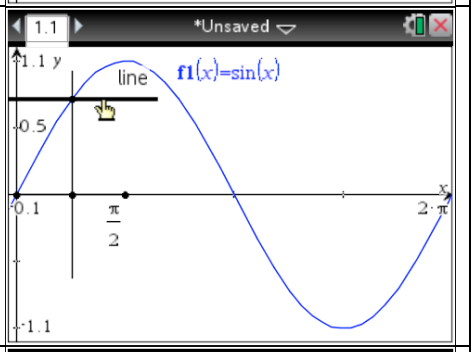
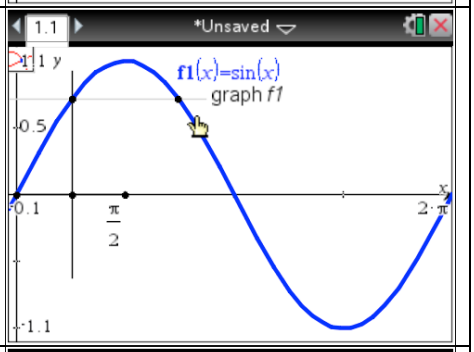
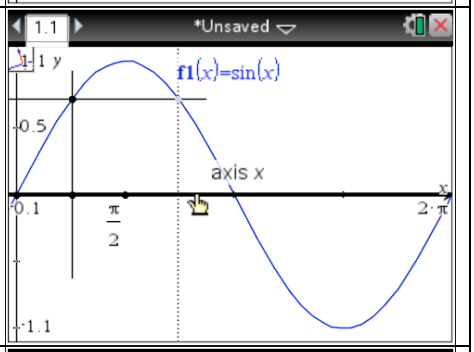
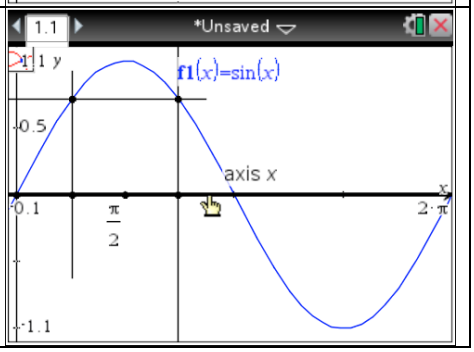
Designer intends to make use of the sine curve as the backdrop and have the art pieces placed as shown:

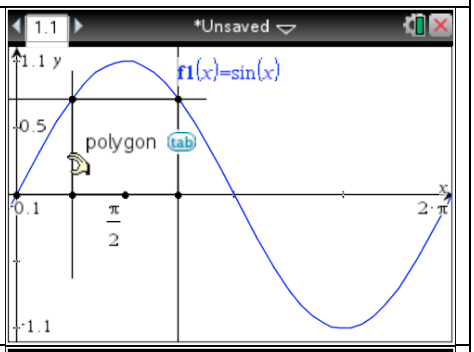
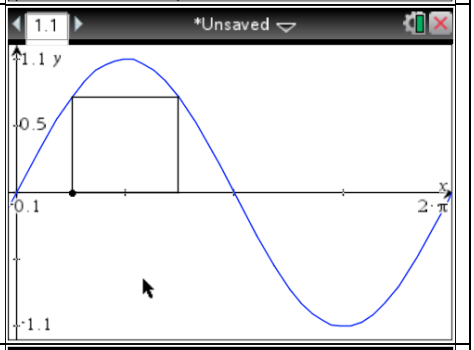
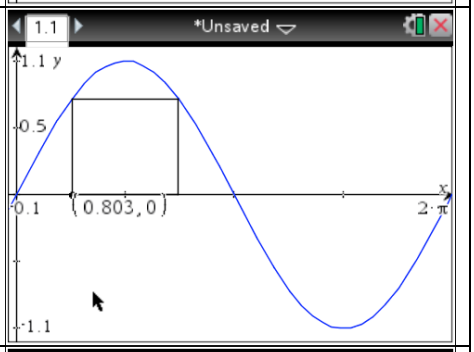
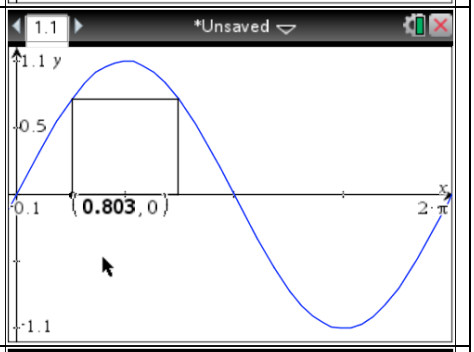
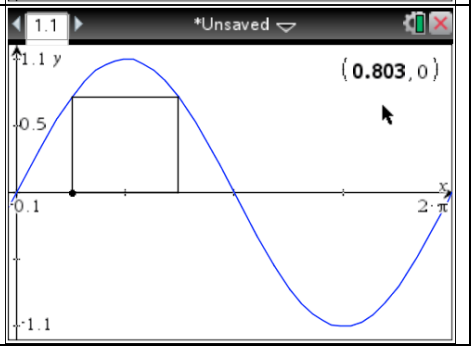


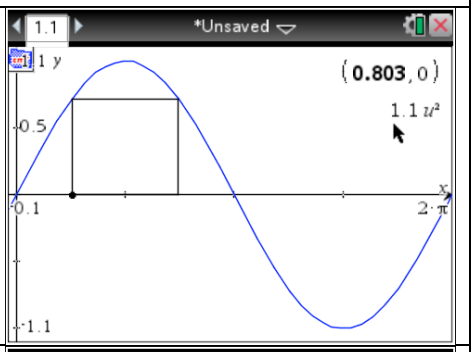
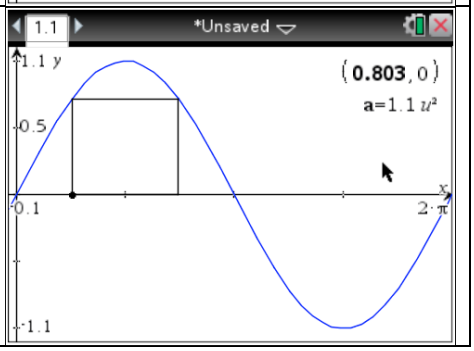
Your Task:
Construct a virtual model of one art piece and use it to determine the dimensions of the art pieces with the maximum possible area.

	Instructions	Key Strokes	Screenshot
1.	Go to home page	on	
2.	Open a new document You may want to save the previous document so that you can retrieve it later.	1	

	Instructions	Key Strokes	Screenshot
3.	Add a Graphs page Graph the sine function	2 S I N (X) [enter]	
4.	Adjust the values on the axes as shown on the screenshot by double clicking on them.		
5.	Use measurement transfer function to construct the point (π/2,0) Draw a line segment from the origin to the point (π/2,0)	menu 8 4 8 ▸ ▸ menu 8 1 5 ▸	
6.	Place a point on the line segment	menu 8 1 2 ▸	
7.	Construct a line through the point and perpendicular to the *x*-axis	menu 8 4 1 ▸	

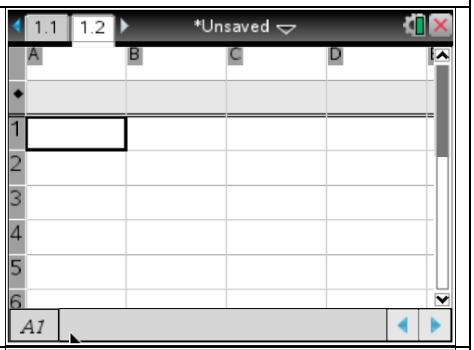
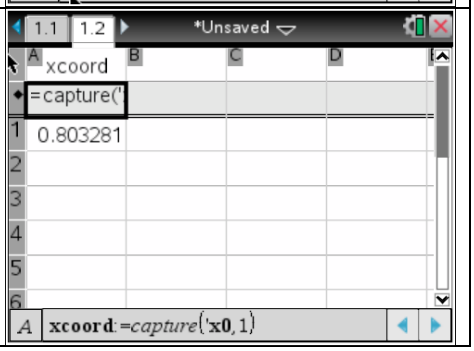
	Instructions	Key Strokes	Screenshot
8.	Find the point of intersection of the perpendicular line and the curve	menu 8 1 3	
9.	Construct a line through this point perpendicular to the *y*-axis	menu 8 4 1	
10.	Find the point of intersection of this line and the curve	menu 8 1 3	
11.	Construct a line through this point perpendicular to the *x*-axis	menu 8 4 1	
12.	Find the point of intersection of the line constructed and the *x*-axis	menu 8 1 3	

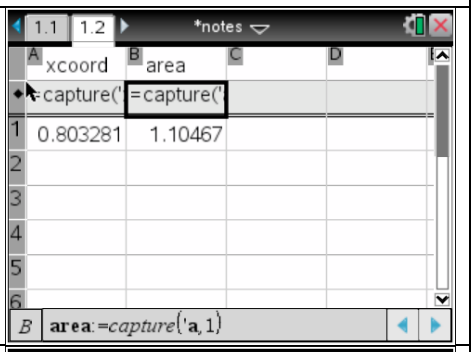
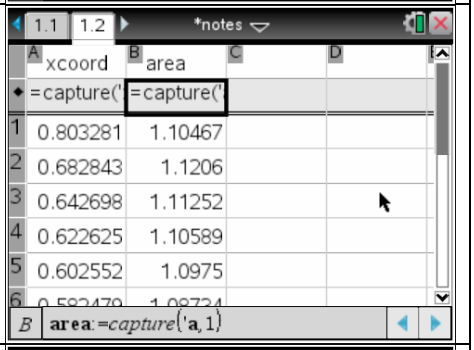
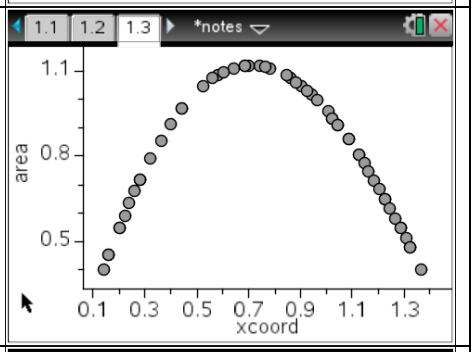
	Instructions	Key Strokes	Screenshot
13.	Draw in the perimeter of the art piece by placing a polygon You should see the label 'polygon' after you press esc and mouse over it.	menu 8 2 4 ↖	
14.	Hide all unnecessary information, leaving the sine curve, the rectangle and the single point as shown	menu 1 3 ↖	
15.	Right Click on the remaining point to find its coordinates	↖ ctrl menu 7	
16.	Right click on the *x*-coordinate and store the value as a variable *x*0 The number should become bold	↖ ctrl menu 5 X 0 [enter]	
17.	Move the coordinates to the corner of the screen To grab the coordinates To place the coordinates after moving	ctrl ↖ ↖	

	Instructions	Key Strokes	Screenshot
18.	Measure the area of the rectangle and place the measurement below the coordinates	menu 8 3 2 ▸ ✦ ✦	
19.	Right click on the measurement and store it as a variable *a* Adjust the resulting text accordingly	▸ ctrl menu 5 A [enter]	

The virtual model has been completed at this stage. The next step is to collect data by using the data capture function.

Set up the data capture and analyse the data using statistical regression.

	Instructions	Key Strokes	Screenshot
1.	Add a new Lists and spreadsheets page	ctrl doc 4	
2.	Label column A as '*x*coord' Go to the formula cell for column A to set up data capture, selecting *x*0 as the variable to capture Check your formula by clicking on the formula cell	▸ X C O O R D [enter] menu 3 2 1 var ▸ ✦ [enter]	

	Instructions	Key Strokes	Screenshot
3.	Label column B as 'Area' Go to the formula cell for column B to set up data capture, selecting *a* as the variable to capture Check your formula by clicking on the formula cell	▸ A R E A [enter] menu 3 2 1 var ▸ [enter]	
4.	Go back to page 1.1 Grab the point Move the point Release the point Go back to page 1.2	ctrl [left] ctrl ▸ ▸ esc ctrl [right]	
5.	Add a new Data and Statistics page	ctrl doc 5	
6.	Choose 'xcoord' as the independent variable Choose 'area' as the dependent variable	tab ▸ tab ▸	
7.	Use an appropriate regression to model the data	menu 4 6