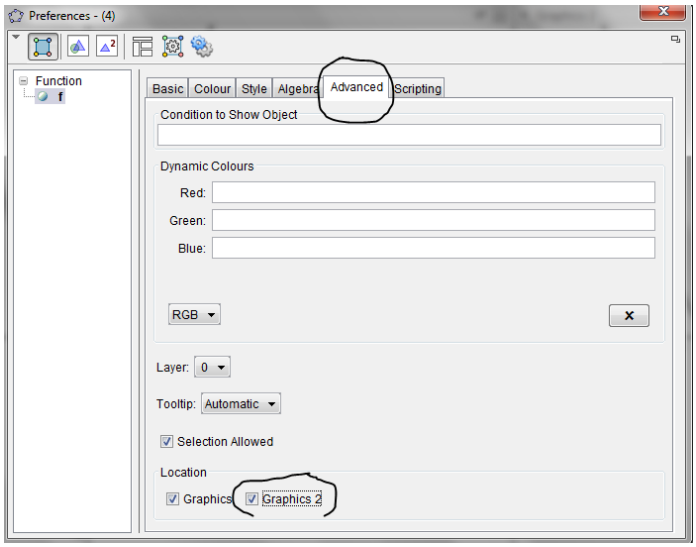
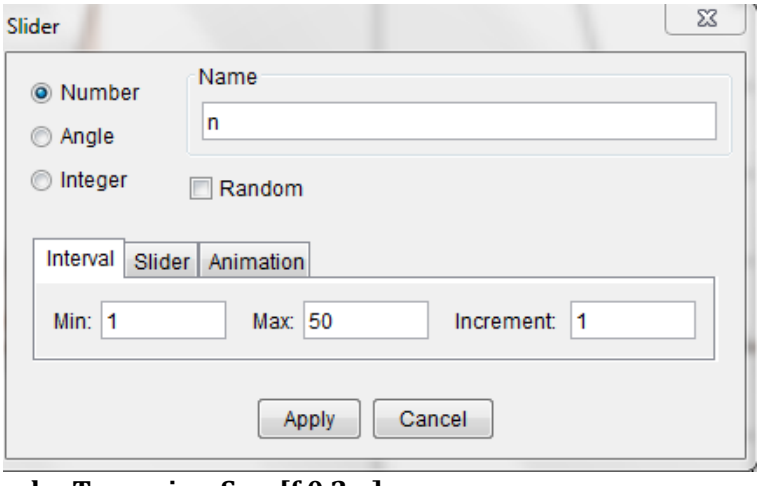
Activity 11: Using the two Graphics Views

Use the two Graphics views to find the Area under a curve by *(i)* the Integral method and *(ii)* the Trapezoidal Rule.

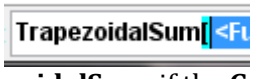
1. Go to **File** and choose **New Window**.
2. Draw the graph of your function in the usual way. For example in the **Input Bar** type **f(x) = x^2**.
3. Go to **View** and select **Graphics 2**. If the two Graphics views are not aligned right click on the **Graphics View** and choose **Standard View**.
4. Select the graph of your function, right click and choose **Object Properties.**
5. With the **Advanced tab** open, click **Graphics 2**.



6. Click  at the top of the **Dialogue box.**
7. **Click** on the **Graphics 1 View** and find the integral of the function between 0 and 2 as in the Activity 9 above.
8. Click on the **Graphics 2 View.**
9. Select the **Slider tool**  . Click on the **Graphics 2 View** and create a **slider** called n with **Min:** =1, **Max:** =50 and **Increment:** = 1. Click **Apply**.



10. In the **Input Bar** type **b= TrapeziumSum[f,0,2,n].**

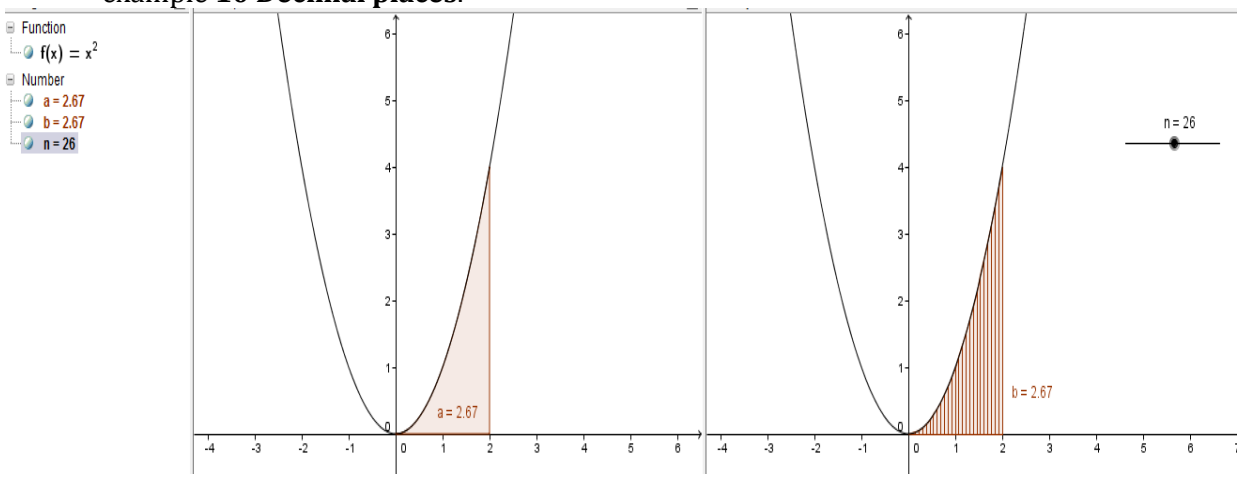


Note: **TrapeziumSum** is replaced by **TrapezoidalSum**, if the **GeoGebra Language** is set to **English(US)** instead of **English(UK).** To change the **GeoGebra Language** go to **Options**, **Language** and follow the arrows.

11. Move the **slider n** and as **n** gets larger check the relationship between the integral and trapezium area.

Note: The value for the **Trapezium sum** should eventually have the same value as the integral value when n increases.

Note: To get more accurate area values go to **Options**, **Rounding** and **choose** for example **10 Decimal places**.



Can you suggest other uses for the **two Graphics Views**?

Activity 12: To fit a graph to a list of points that are shown on the Spreadsheet view

1. Go to view and choose **Spreadsheet**.
2. Insert the *x* co-ordinates of the points in **Column A** and the *y* co-ordinates in the **column B**.

Spreadsheet

	A	B
1	-3	10
2	-2	5
3	-1	2
4	0	1
5	1	2
6	2	5
7	3	10

3. Highlight the two columns of data in the **Spreadsheet**, right click, choose **Create** and **List of points**.
4. In the **Input Bar** type **Fitpoly[list1,2],** if the list is list1 and you require a curve of degree 2 for example.

Note: If you require an exponential curve, input the co-ordinates of the points in the **Spreadsheet view** and create a list as above and then type **FitExp[list1]** in the **Input Bar,** if the list is list1.