

# Trapezium Rule-3

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Select LIST mode from the main menu by using the arrow keys to highlight the LIST icon or pressing 4.



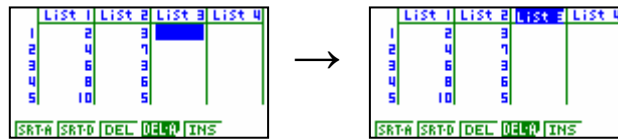
Note: 
$$\text{Area} = \frac{1}{2}h[y_0 + 2y_1 + 2y_2 + \dots + 2y_{n-1} + y_n]$$
 Where 
$$h = \frac{x_n - x_0}{n}$$

Also known as the trapezoidal rule

**Example:** Calculate the area bounded by the following data.

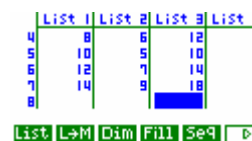
X	2	4	6	8	10	12	14
Y	3	7	3	6	5	7	9

**Answer:** Enter LIST mode and enter in the X values in List 1 space and in the Y values in List 2 space.



Move the cursor to 'sit' on top of the List 3 space as indicated in the screensnap.

Then press **OPTN F1** then type **2 x** then press **F1 2** to get **2xList 2** on the screen, then press **EXE**



Reading off the required values from **List 2 only**

$$\begin{aligned} \text{Area} &= \frac{1}{2} \times 2 \times [3 + 2 \times 7 + 2 \times 3 + 2 \times 6 + 2 \times 5 + 2 \times 7 + 9] \\ &= 1 \times [3 + 14 + 6 + 12 + 10 + 14 + 9] \\ &= \mathbf{68 \text{ sq units}} \end{aligned}$$

**OR** reading off the required values from **List 2 and List 3:**

$$\begin{aligned} \text{Area} &= \frac{1}{2} \times 2 \times [3 + 14 + 6 + 12 + 10 + 14 + 9] \\ &= \mathbf{68 \text{ sq units}} \end{aligned}$$

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