

Simpsons Rule - 3

This resource was written by Derek Smith with the support of CASIO New Zealand. It may be freely distributed but remains the intellectual property of the author and CASIO.

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



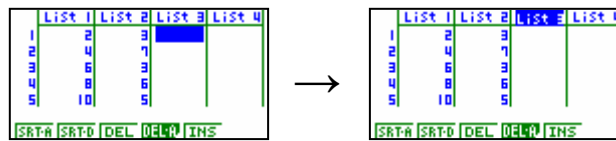
Note: $\text{Area} = \frac{1}{3}h[y_0 + 2y_1 + 4y_2 + 2y_3 + \dots + 4y_{n-2} + 2y_{n-1} + y_n]$
 Where $h = \frac{x_n - x_0}{n}$

The number of steps for using Simpsons Rule has to be even.

Example: Calculate the area bounded by the following data.

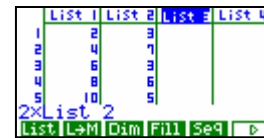
X	2	4	6	8	10	12	
Y	3	7	3	6	5	7	

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



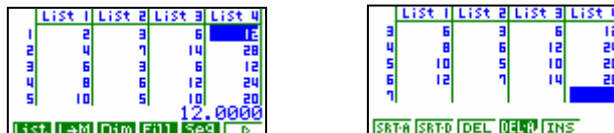
Move the cursor to 'sit' on top of the List 3 space as indicated in the screensnap.

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



Move the cursor to 'sit' on top of the List 4 space as indicated in the screensnap.

Then press **OPTN F1** then type 4 x then press **F1 2** to get 4xList 2 on the screen, then press **EXE**



off the required values from List 2 only:

$$\begin{aligned} \text{Area} &= \frac{1}{3} \times 2 \times [3 + 4 \times 7 + 2 \times 3 + 4 \times 6 + 2 \times 5 + 7] \\ &= \frac{1}{3} [3 + 28 + 6 + 24 + 10 + 7] \\ &= \frac{1}{3} [78] \\ &= 26 \text{ sq units} \end{aligned}$$

Reading

OR reading off the required values from **List 2, List 3 and List 4:**

$$\begin{aligned}\text{Area} &= \frac{1}{3} [3 + 28 + 6 + 24 + 10 + 7] \\ &= \frac{1}{3} [78] \\ &= \mathbf{26 \text{ sq units}}\end{aligned}$$

For further tips, more helpful information and software support visit our website
www.monacocorp.co.nz/casio