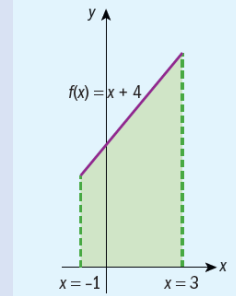


## Chapter 11 / Example 2

## Using the GDC to evaluate areas

Find the area shown by

- a using the formula for the area of a trapezium  
 b using the integral function on your calculator.

The area is  $\frac{1}{2} \times 4 \times 3 + 7 = 20$ .Press **MENU** 5 **GRAPH** to display the equation entry screen.Type  $x + 4$  and press **EXE** to enter the equation as Y1.

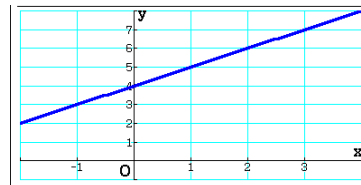
Graph Func :Y=  
 Y1:  $x+4$  [—]  
 Y2: [—]  
 Y3: [—]  
 Y4: [—]  
 Y5: [—]  
 Y6: [—]  
 [SELECT] [DELETE] [TYPE] [TOOL] [MODIFY] [DRAW]

Press **SHIFT** **F3** V-WIN.Set the axes to show  $-2 \leq x \leq 4$  and  $-1 \leq y \leq 8$ 

You can leave the other items as they are.

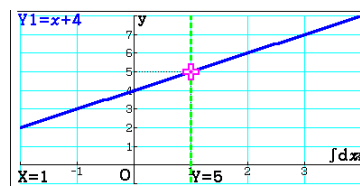
Press **EXIT** when you have finished.

View Window  
 Xmin : -2  
 max : 4  
 scale: 1  
 dot : 0.01587301  
 Ymin : -1  
 max : 8  
 [INITIAL] [TRIG] [STANDARD] [V-MEM] [SQUARE]

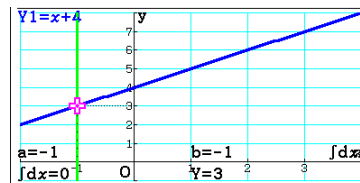
Press **F6** DRAW to display the graph screenThe GDC now displays the function  $Y1 = x + 4$ To find the integral press **F5** G-SOLVE **F6**  $\triangleright$  **F3**  $\int dx$  **F1**  $\int dx$ 

To find the area you need to give the lower and upper limits of the region that includes the intersection.

The GDC asks you to set the lower limit.

Type  $-1$  and press **EXE**.

The GDC asks you to set the upper limit.



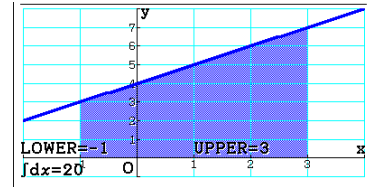
## Chapter 11 / Example 2

## Using the GDC to evaluate areas

Type 3, the upper limit, and press **EXE**.

The GDC shows the area defined by the integral and its value.

$$\int_{-1}^3 x + 4 \, dx = 20$$

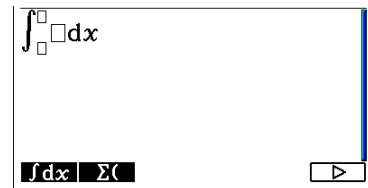


The integral can also be calculated without the need for a graph.

Press **MENU** 1 **RUN-MAT** to display the Run-Matrix screen for arithmetical calculations.

Press **F4** MATH **F6**  $\triangleright$  **F1**  $\int dx$

You will see an integral template. There are three fields to complete in the template: one for each of the limits and one for the function you are integrating.



Enter the function  $x + 4$

Enter the lower limit  $-1$  and the upper limit  $3$ .

Press **EXE**.

$$\int_{-1}^3 x + 4 \, dx = 20$$

