

Chapter 11 / **Example 16****Area between a curve and the y-axis**

Find the area of the region bounded by the curve $y = x^2$ and the y-axis, $x \in [-2, 0]$.

Press **MENU** 5 **GRAPH** to display the equation entry screen.

Type x^2 and press **EXE** to enter the equation as Y1.

Graph Func : Y=
Y1: x^2 [—]
Y2: [—]
Y3: [—]
Y4: [—]
Y5: [—]
Y6: [—]
[SELECT] [DELETE] [TYPE] [TOOL] [MODIFY] [DRAW]

Choose appropriate axes to show the graph.

Press **SHIFT** **F3** V-WIN.

Set the axes to show $-3 \leq x \leq 3$ and $-1 \leq y \leq 5$.

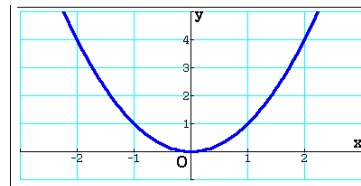
You can leave the other items as they are.

Press **EXIT** when you have finished.

View Window
Xmin : -3
max : 3
scale: 1
dot : 0.01587301
Ymin : -1
max : 5
[INITIAL] [TRIG] [STANDARD] [V-MEM] [SQUARE]

Press **F6** DRAW to display the graph screen.

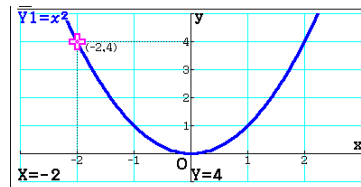
The GDC now displays the quadratic function $Y1 = x^2$.



To find the value of y when $x = -2$ press **F1** Trace

Type -2, the value of the x-coordinate, and press **EXE**.

The GDC shows the point $-2, 4$.



Chapter 11 / **Example 16****Area between a curve and the y-axis**

It $y = x^2$ then $x = \sqrt{y}$.

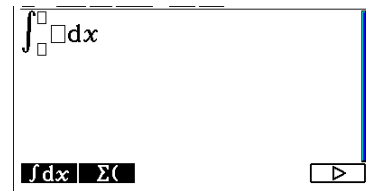
The area is $\int_0^4 \sqrt{y} \, dy$

The fx-CG50 can only integrate with respect to x so you will find instead $\int_0^4 \sqrt{x} \, dx$

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

Press **F4** MATH **F6** \int **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 \sqrt{x}

Enter the lower limit 0 and the upper limit 4.

Press **EXE**.

$$\int_0^4 \sqrt{y} \, dy = \int_0^4 \sqrt{x} \, dx = 5.33$$

