

Chapter 11 / Example 14


Area between curves

Sketch the region bounded by $y = \sqrt{x+2}$, $y = \frac{1}{2x+4}$ and $x=3$. Find the area of the region.

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

Type $\sqrt{x+2}$ and press **EXE** to enter the first equation as Y1.

Type $\frac{1}{2x+4}$ and press **EXE** to enter the second equation as Y2.

Use  to select the fraction template.

Graph Func :Y=
Y1= $\sqrt{x+2}$ [—]
Y2= $\frac{1}{2x+4}$ [—]
Y3: [—]
Y4: [—]
Y5: [—]
[SELECT] [DELETE] [TYPE] [TOOL] [MODIFY] [DRAW]

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

Set the axes to show $-2 \leq x \leq 4$ and $-1 \leq y \leq 3$.

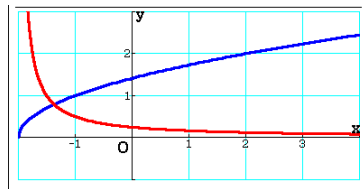
You can leave the other items as they are.

Press **EXIT** when you have finished.

View Window
Xmin : -2
max : 4
scale : 1
dot : 0.01587301
Ymin : -1
max : 3
[INITIAL] [TRIG] [STANDARD] [V-MEM] [SQUARE]

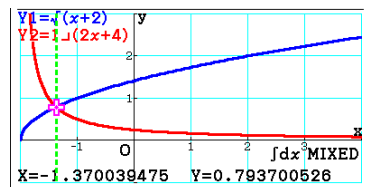
Press **F6** DRAW to display the graph screen

The GDC now displays the curves $Y1 = \sqrt{x+2}$ and $Y2 = \frac{1}{2x+4}$.



To find the area of the region press **F5** G-SOLVE **F6** \triangleright **F3** $\int dx$ **F4** MIXED.

The GDC shows the intersection at 1.37, 0.794 as the lower limit. Press **EXE**.



The GDC asks you to choose the upper limit.

Type 3 and press **EXE**.

The GDC displays the value of the area of the region.

$$A = 6.08$$

