

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.

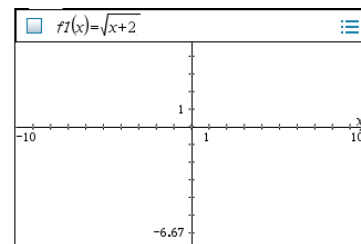
Open a new document and add a Graphs page.

The entry line is displayed at the top of the work area.

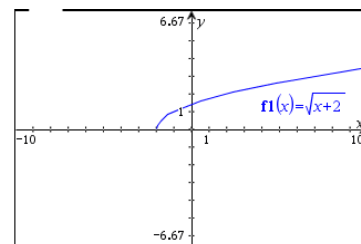
The default graph type is function, so 'f1(x)=' is displayed.

The default axes are $-10 \leq x \leq 10$ and $-6.67 \leq y \leq 6.67$.

Type $\sqrt{x+2}$ and press **enter**.



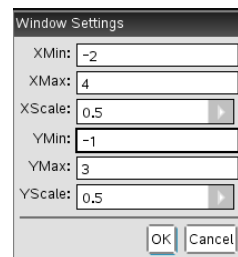
The GDC displays the graph $f1(x) = \sqrt{x+2}$ with the default axes.



Press **menu** 4:Window/Zoom | 1:Window Settings...

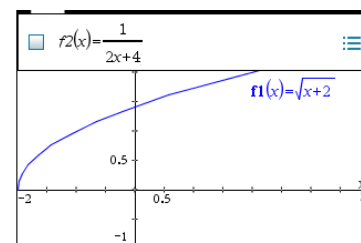
Set the axes to show $-2 \leq x \leq 4$ and $-1 \leq y \leq 3$ with the scales set to 0.5.

Press **enter** when you have finished.



Press **tab** to display the entry line again. This time 'f2(x)=' is displayed.

Type $\frac{1}{2x+4}$ using the fraction template **ctrl** **[]** ($\frac{\square}{\square}$) and press **enter**.

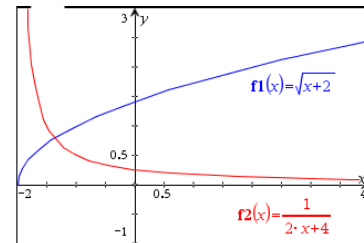


Chapter 11 / Example 14

Area between curves

The GDC now displays the curves $f1(x) = \sqrt{x+2}$ and

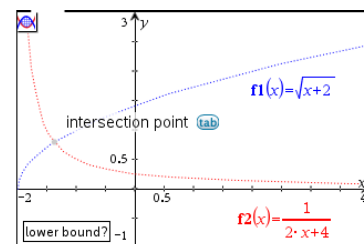
$$f2(x) = \frac{1}{2x+4}.$$



To find the area of the region press **menu** 6:Analyze Graph | 7:Bounded Area.

Use the touchpad to move the cursor to the first of the two intersection points. The GDC displays the words 'intersection point' when you are close enough.

Click the touchpad.



To enter the upper bound of the region, type 3 and press **enter**.

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

$$A = 6.08$$

