Chapter 11 / **Example 15**

Area between curves

Find the area of the region bounded by $y = \sin x$, $y = \cos x$, $x = 0$ and $x = 2\pi$.

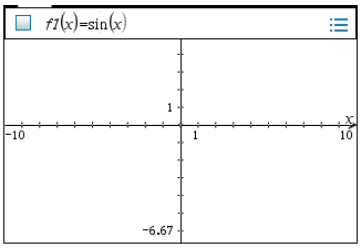
Open a new document and add a Graphs page.

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

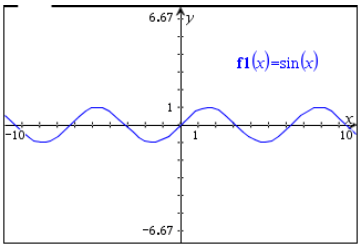
The default graph type is function, so '$f1(x)=$' is displayed.

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

Type sin x and press enter.



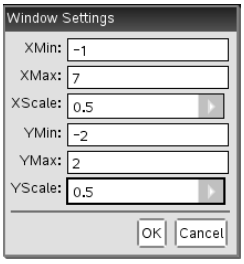
The GDC displays the graph $f1\ x = \sin x$ with the default axes.



Press menu 4:Window/Zoom | 1:Window Settings…

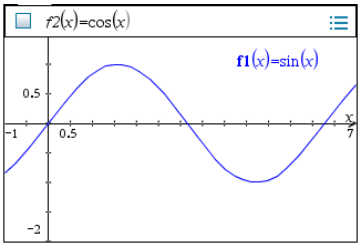
Set the axes to show $-1 \le x \le 7$ and $-2 \le y \le 2$ with the scales set to 0.5.

Press enter when you have finished.

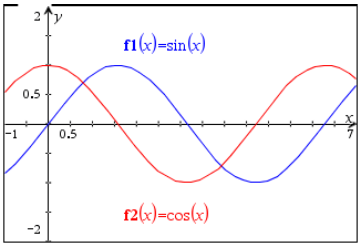


Press tab to display the entry line again. This time '$f2(x)=$' is displayed.

Type cos x and press enter.



The GDC now displays the curves $f1\ x = \sin x$ and $f2\ x = \cos x$.

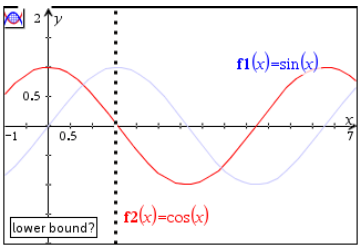


Chapter 11 / **Example 15**

Area between curves

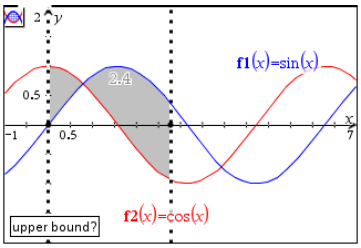
To find the area of the region press menu 6:Analyze Graph | 7:Bounded Area.

The GDC asks you to enter the lower bound.



Do not use the line, type 0 and press enter.

The GDC asks you to enter the upper bound.



To enter the upper bound of the region, type $2 \times \pi$ and press enter.

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

$A = 5.66$