

Chapter 11 / Example 15

Area between curves

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

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

Type $\sin x$ and press **EXE** to enter the first equation as Y1.

Type $\cos x$ and press **EXE** to enter the second equation as Y2.

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

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

Set the axes to show $-1 \leq x \leq 7$ and $-2 \leq y \leq 2$.

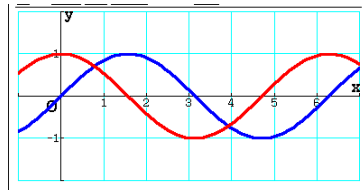
You can leave the other items as they are.

Press **EXIT** when you have finished.

View Window
Xmin : -1
max : 7
scale: 1
dot : 0.02116402
Ymin : -2
max : 2
[INITIAL] [TRIG] [STANDARD] [V-MEM] [SQUARE]

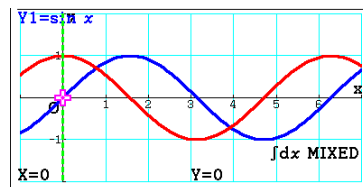
Press **F6** DRAW to display the graph screen

The GDC now displays the curves $Y1 = \sin x$ and $Y2 = \cos x$.



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

The GDC asks you to set the lower limit value. Type 0 and press **EXE**.



The GDC asks you to choose the upper limit.

Type $2 \times \pi$ and press **EXE**.

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

$A = 6.08$

