

Chapter 2 / **Example 16****Solving absolute value functions**

Solve  $|x + 1| = -2x - 5$ , and check your answer(s). Confirm graphically.

Press **MENU** 5 **2nd** **DEL** to display the equation entry screen.

Enter  $|x + 1|$  and press **EXE** to enter the first equation as Y1.

To enter the absolute value function press **OPTN** **F5** NUMERIC **F1** Abs

Type  $-2x - 5$  and press **EXE** to enter the second equation as Y2.

Graph Func : Y=

Y1:  $|x+1|$  [—]

Y2:  $-2x-5$  [—]

Y3: [—]

Y4: [—]

Y5: [—]

Y6: [—]

[SELECT] [DELETE] [TYPE] [TOOL] [MODIFY] [DRAW]

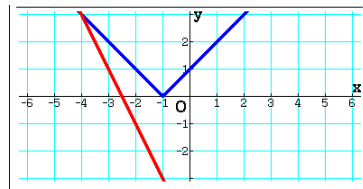
Press **F6** DRAW to display the graph screen

The GDC now displays the curve and the straight-line:

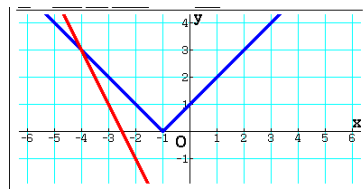
$$Y1 = |x + 1|$$

$$Y2 = -2x - 5$$

The default axes are  $-6.3 \leq x \leq 6.3$  and  $-3.1 \leq y \leq 3.1$ .



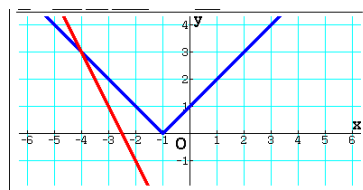
Press **▲** to get a better view of the graphs and their intersection.



To find the intersection press **F5** G-Solv **F5** Intersect.

Press **EXE** to display the coordinates.

Press **EXIT** to leave G-Solv mode and **F6** DRAW to display the graph screen again.



The GDC displays the intersection of the two straight lines at the point  $(-4, 3)$ .

The solution is  $x = -4$ .

