

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

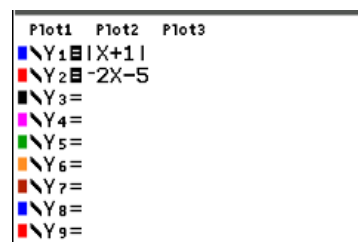
Solve $|x + 1| = -2x - 5$, and check your answer(s). Confirm graphically.

Press $[f1]$ $[y=]$ to display the equation entry screen.

Enter $|x + 1|$ and press $[enter]$ to enter the first equation as Y_1 .

To enter the absolute value function press $[math]$ \blacktriangleright NUM 1:abs(

Type $-2x - 5$ and press $[enter]$ to enter the second equation as Y_2 .



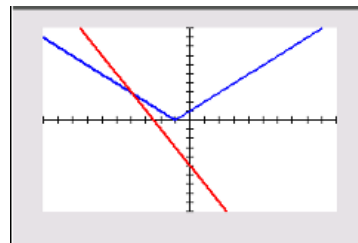
Press $[f5]$ $[graph]$ to display the graph screen

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

$$Y_1 = |x + 1|$$

$$Y_2 = -2x - 5$$

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

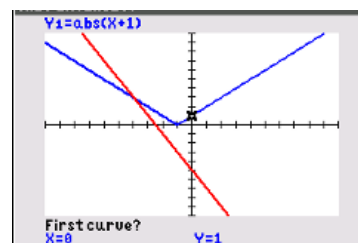


Press $[2nd]$ $[f4]$ $[calc]$ 5:intersect

To find the intersection you need to choose the two lines that intersect.

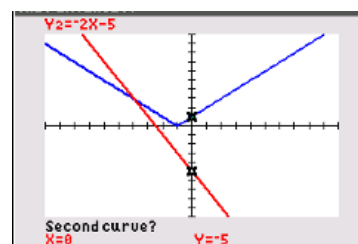
The GDC shows a cross on one of the lines and 'First curve?'.

Press $[enter]$.



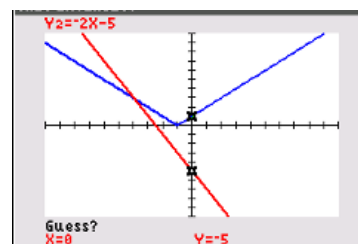
The GDC shows a cross on the other line and 'Second curve?'.

Press $[enter]$.



The GDC requires an initial guess for the position of the intersection. Choose the default position.

Press $[enter]$.



Chapter 2 / **Example 16**

Solving absolute value functions

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

The solution is $x = -4$.

