Solving Absolute Value Inequalities with the TI-86

Solve: $|2x + 5| > 7$

Algebraically:

$2x + 5 > 7$	or	$2x + 5 < -7$
$2x > 2$		$2x < -12$
$x > 1$		$x < -6$

x is all the values less than -6 or greater than 1.

$(-\infty, -6) \cup (1, \infty)$

Graphically (**abs** is the command for absolute value)

Solve $|2x + 5| > 7$

Graph
F1: Y=

(Clear functions)

Y1= abs(2x + 5)
Y2 = 7

Exit
F3: Zoom
F4:ZStd This graphs the equations in the standard viewing window.

The solution is the set of values for x for which Y1 is greater than (**above**) Y2.

Find the points of intersection by pressing **More, F1: Math, More,** then **F3:Isect**.

The points of intersection are (-6, 7) and (1, 7)

Y1 is **above** Y2 for all the **x values** to the **left** of -6 and to the **right** of 1.

The solution is $(-\infty, -6) \cup (1, \infty)$.