Solving Absolute Value Inequalities with the TI-83+

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 **(**the **abs** command is located on the catalog menu: **2nd Catalog**, move the cursor to abs (then hit **Enter)**

Solve $|2x + 5| > 7$

Y=

(Clear functions)

y1 = abs (2x + 5)
Y2 = 7

Graph (in 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 using **2nd Calc** then **5:intersect** :

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