Solving 3-part inequalities on the TI-85

<div style="background:yellow">

Solve $-7 < 2x - 5 < 3$

</div>

Algebraically:

$$-7 < 2x - 5 < 3$$
$$-2 < 2x < 8$$
$$-1 < x < 4$$

x is all the values between -1 and 4.

(-1, 4)

Graphically

Solve $-7 < 2x - 5 < 3$

Set the viewing window to the standard view.

Graph each part of the inequality.

**Graph
F1: Y=**

(Clear functions)

$Y1 = -7$
$Y2 = 2x - 5$
$Y3 = 3$

**Graph
F5: Graph**

The solution is the values of x for which the graph of Y2 is between the graphs of Y1 and Y3.

Find the point of intersection between Y1 and Y2 and between Y2 and Y3.

More

F1: Math
More
F5: Isect
The number 1 for the first equation appears in the upper right hand corner
Enter
The number 2 for the second equation appears in the upper right hand corner
Enter

The intersection is the point (-1, -7).

Repeat the procedure to find the point of intersection between Y2 and Y3.
(Use the down arrow to move the cursor to Y2 for the first curve)

The intersection is the point (4, 3).

The solution is all the <u>x-values</u> between those two points.   (-1, 4)