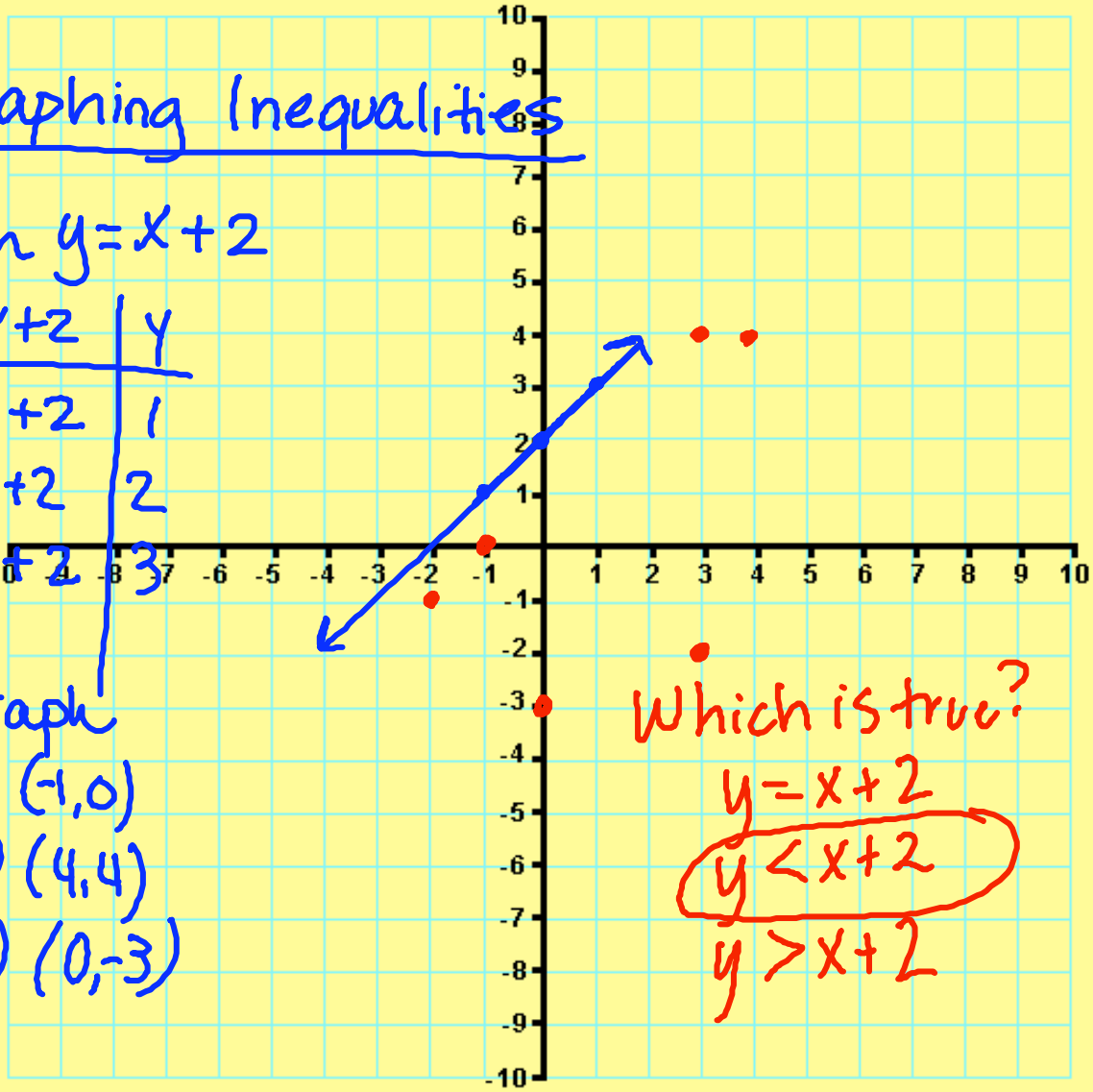
Graphing Inequalities

Graph $y = x + 2$

x	x+2	y
-1	-1+2	1
0	0+2	2
1	1+2	3



Now graph

(3,4) (-1,0)

(3,-2) (4,4)

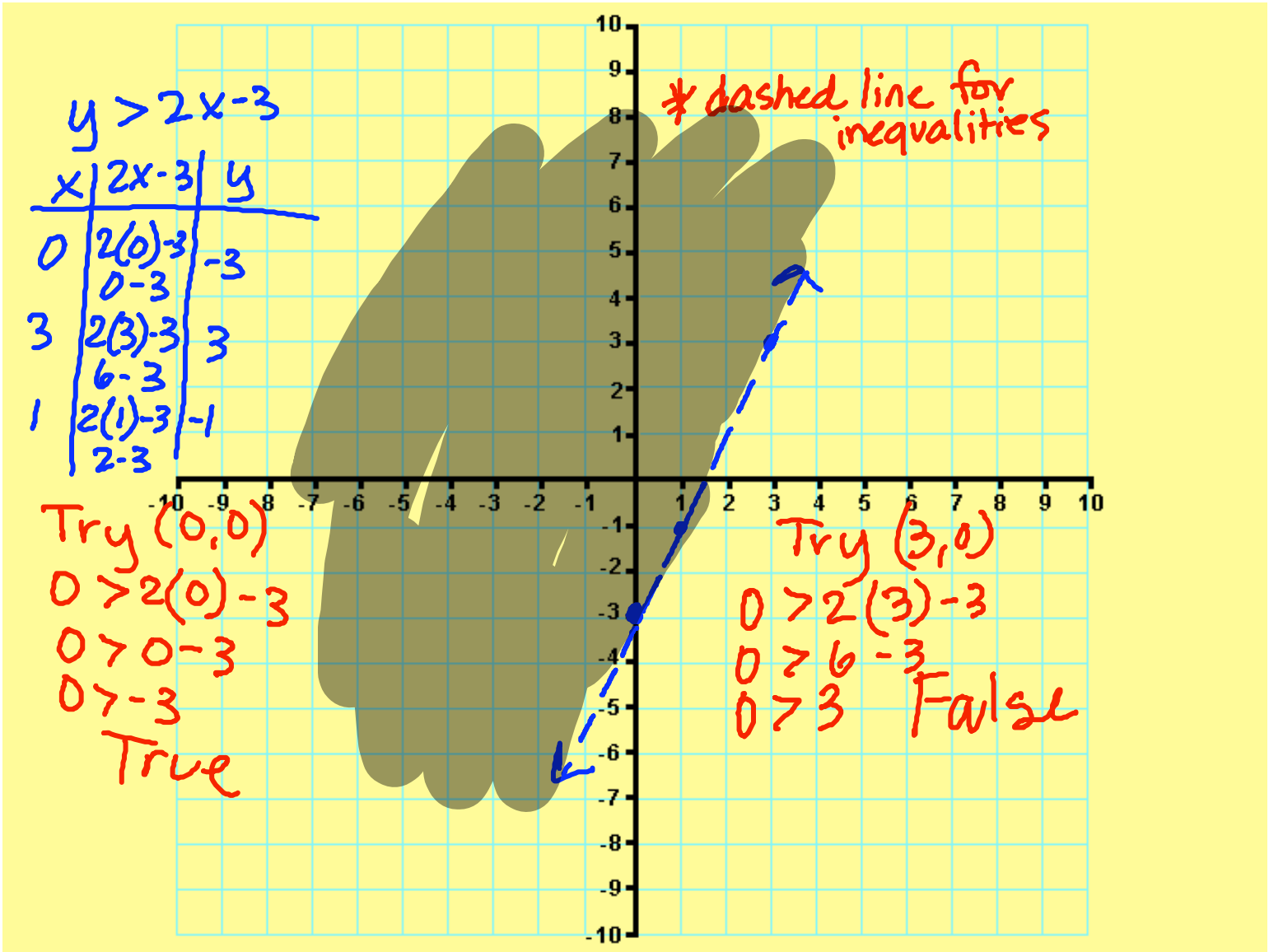
(-2,-1) (0,-3)

Which is true?

$y = x + 2$

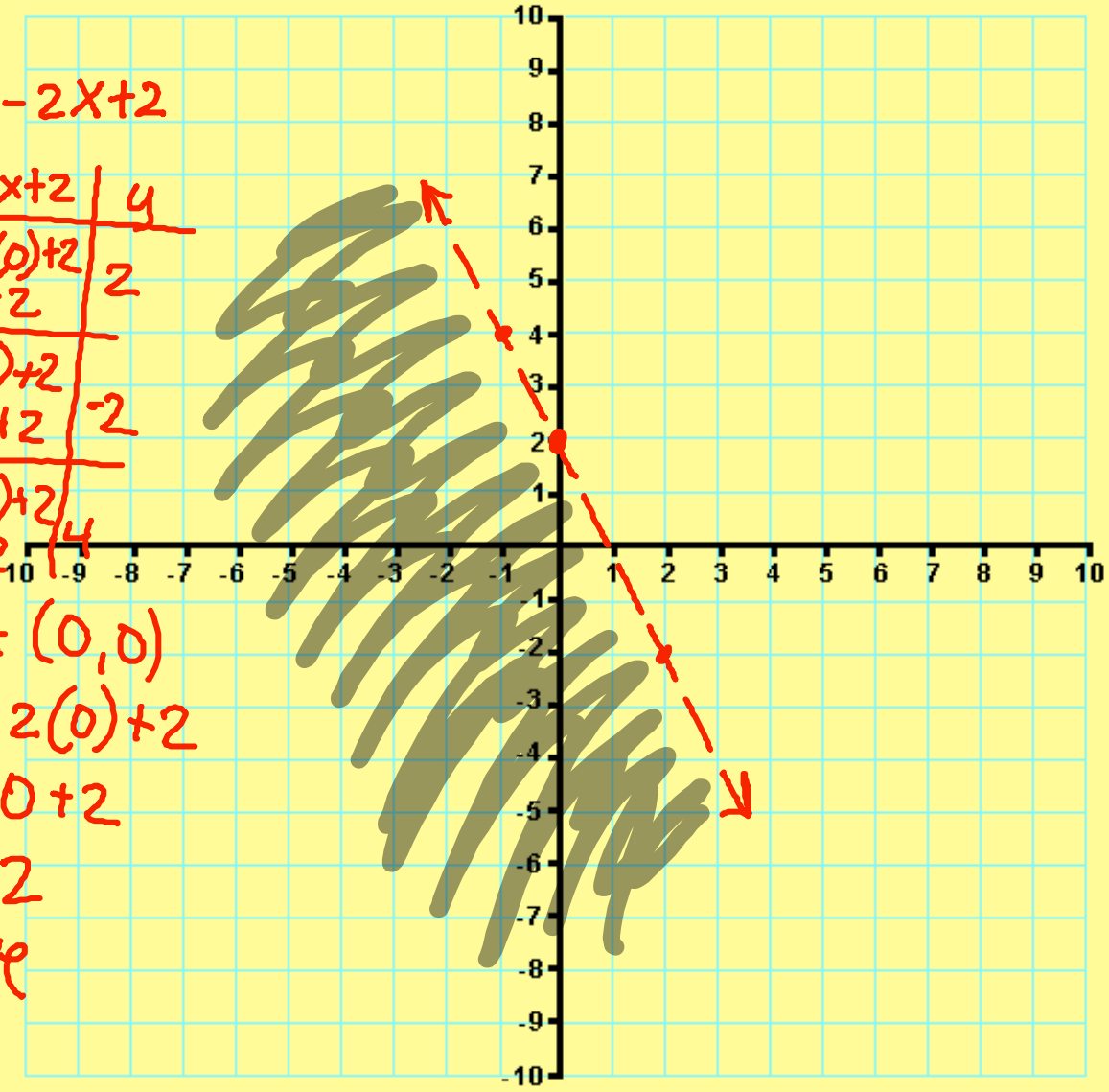
$y < x + 2$

$y > x + 2$


y > 2x - 3
x | 2x - 3 | y
0 | 2(0) - 3 | -3
0 - 3
3 | 2(3) - 3 | 3
6 - 3
1 | 2(1) - 3 | -1
2 - 3
* dashed line for inequalities
Try (0,0)
0 > 2(0) - 3
0 > 0 - 3
0 > -3
True
Try (3,0)
0 > 2(3) - 3
0 > 6 - 3
0 > 3
False

$y < -2x + 2$

x	$-2x+2$	y
0	$-2(0)+2$ $0+2$	2
2	$-2(2)+2$ $-4+2$	-2
-1	$-2(-1)+2$ $2+2$	4



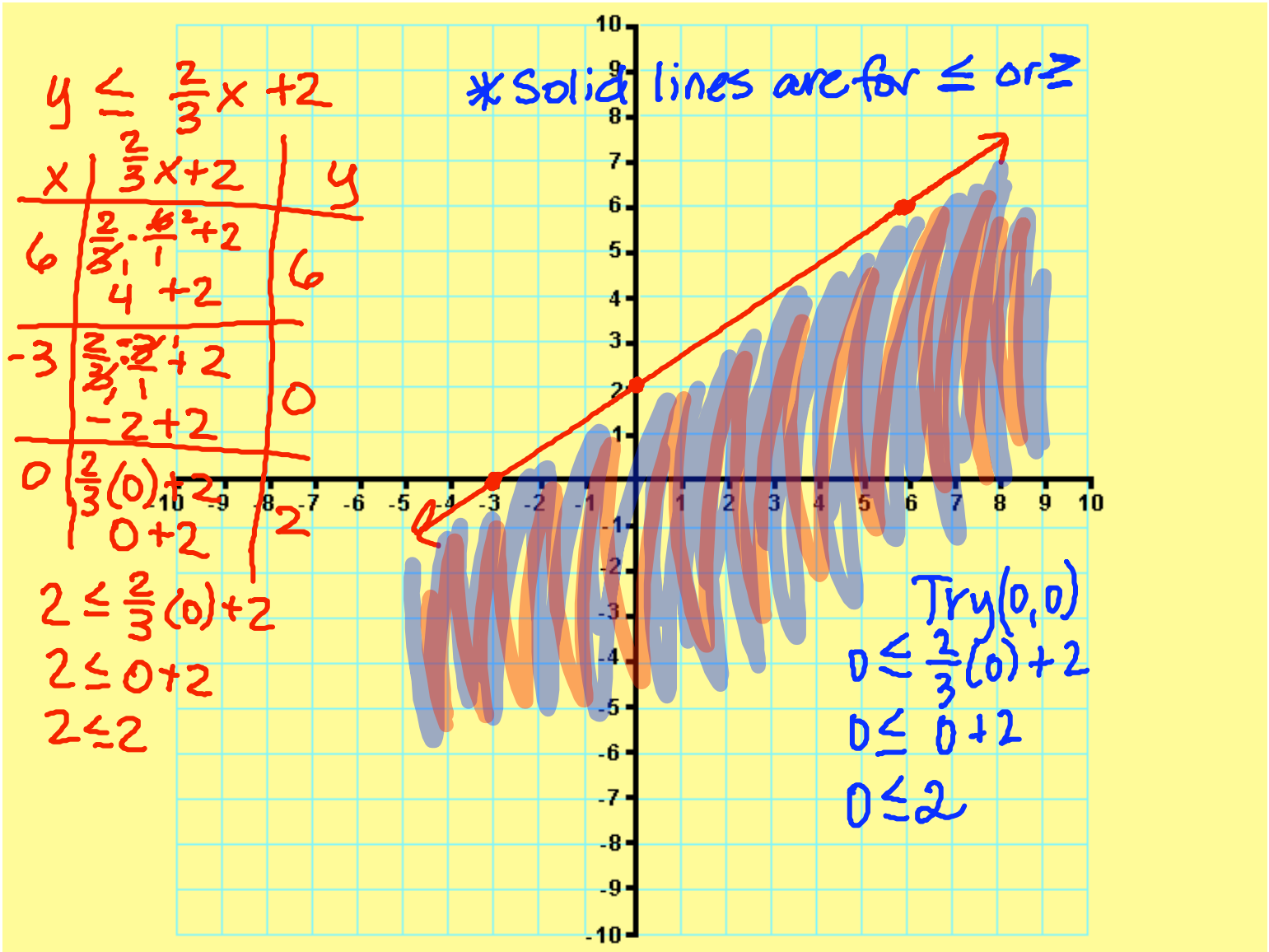
Test (0,0)

$0 < -2(0)+2$

$0 < 0+2$

$0 < 2$

True


$y \leq \frac{2}{3}x + 2$
$\frac{2}{3}x+2$
x
y
6
$\frac{2}{3}\cdot\frac{6^2}{1}+2$
4 +2
6
-3
$\frac{2}{3}\cdot\frac{-3}{1}+2$
-2+2
0
0
$\frac{2}{3}(0)+2$
0+2
2
$2 \leq \frac{2}{3}(0)+2$
$2 \leq 0+2$
$2 \leq 2$
*Solid lines are for ≤ or ≥
Try (0,0)
$0 \leq \frac{2}{3}(0)+2$
$0 \leq 0+2$
$0 \leq 2$