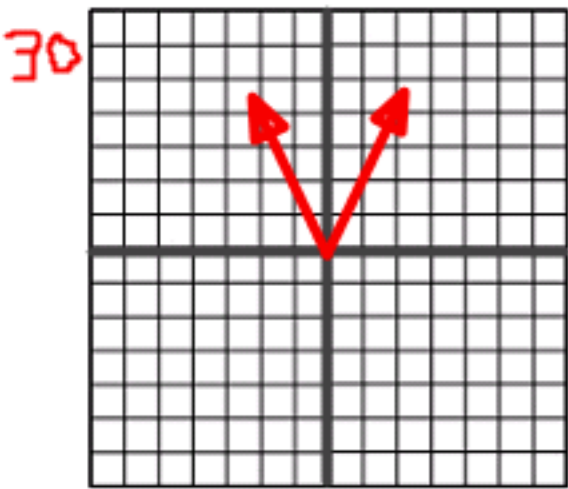


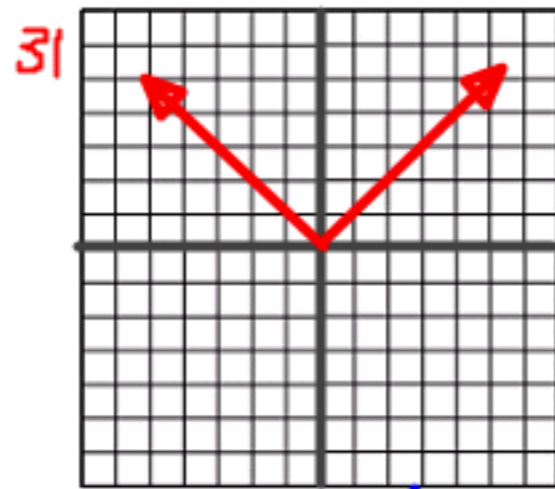
- 15. C
- 16. A
- 17. S
- 18. S
- 19. A
- 20. P

Homework Answers

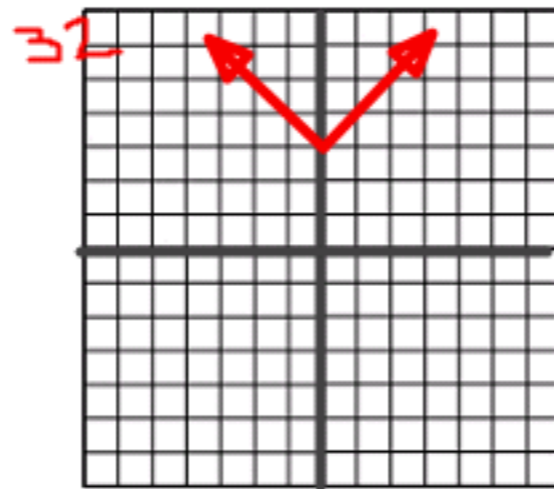
14 POSSIBLE



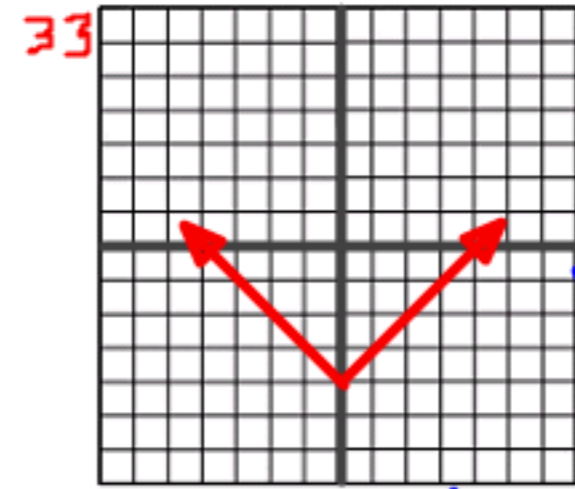
D: $(-\infty, \infty)$
R: $[0, \infty)$



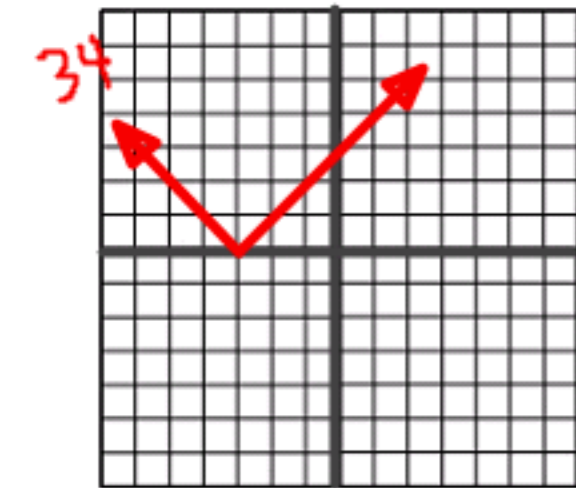
D: $(-\infty, \infty)$
R: $[0, \infty)$



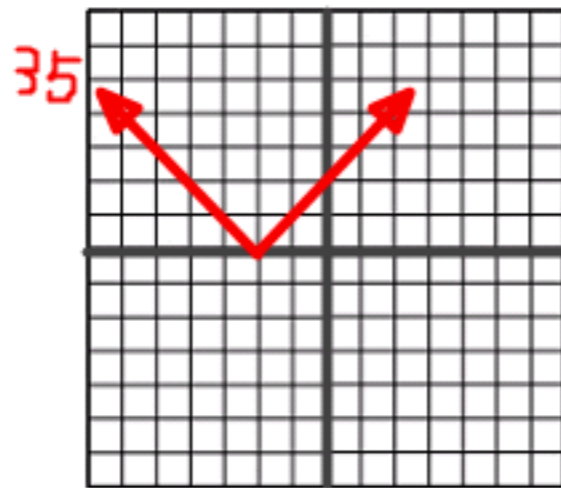
D: $(-\infty, \infty)$
R: $[3, \infty)$



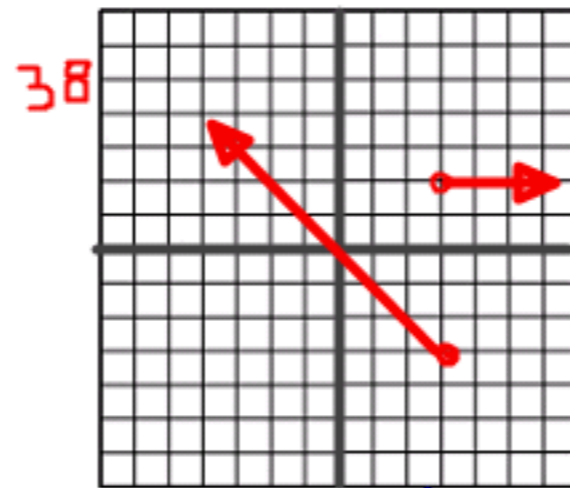
D: $(-\infty, \infty)$
R: $[-4, \infty)$



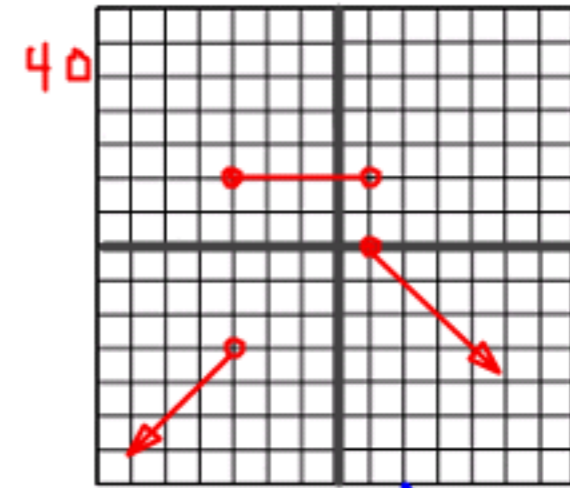
D: $(-\infty, \infty)$
R: $[0, \infty)$



D: $(-\infty, \infty)$
R: $[0, \infty)$



D: $(-\infty, \infty)$
R: $[-3, \infty)$



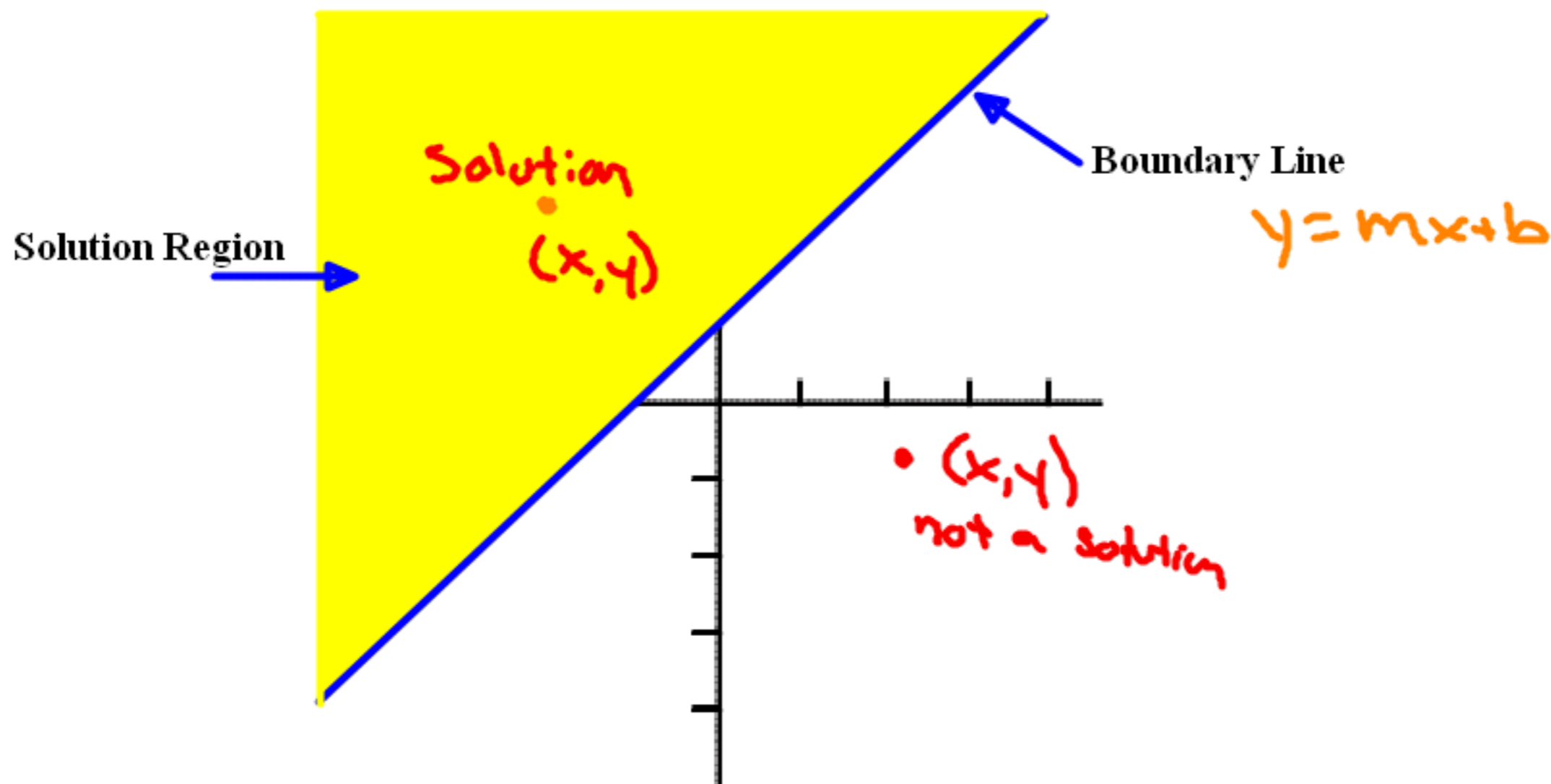
D: $(-\infty, \infty)$
R: $(-\infty, 0], \{2\}$

GRAPHING LINEAR INEQUALITIES

$$y < mx + b$$

The line formed by the equation $y=mx+b$ forms the **boundary** where the x and y coordinates of the ordered pair make each side of the problem equal.

There are many different pairs of x and y that would satisfy the inequality so we show the answer by shading the region on the graph that contains the ordered pairs that will satisfy the inequality.



STEPS:

1. Determine if the boundary line will be solid or dashed.
2. Graph the boundary line.
- 3. Plug in $(0, 0)$ for the x and y
4. If $(0, 0)$ satisfies the inequality shade that side of the boundary line.
5. If $(0, 0)$ does not satisfy the inequality, shade the other side of the boundary line.

$\leq, \geq \rightarrow$ solid
 $<, > \rightarrow$ dashed

$$y \leq 2x + 1 \quad \text{solid}$$

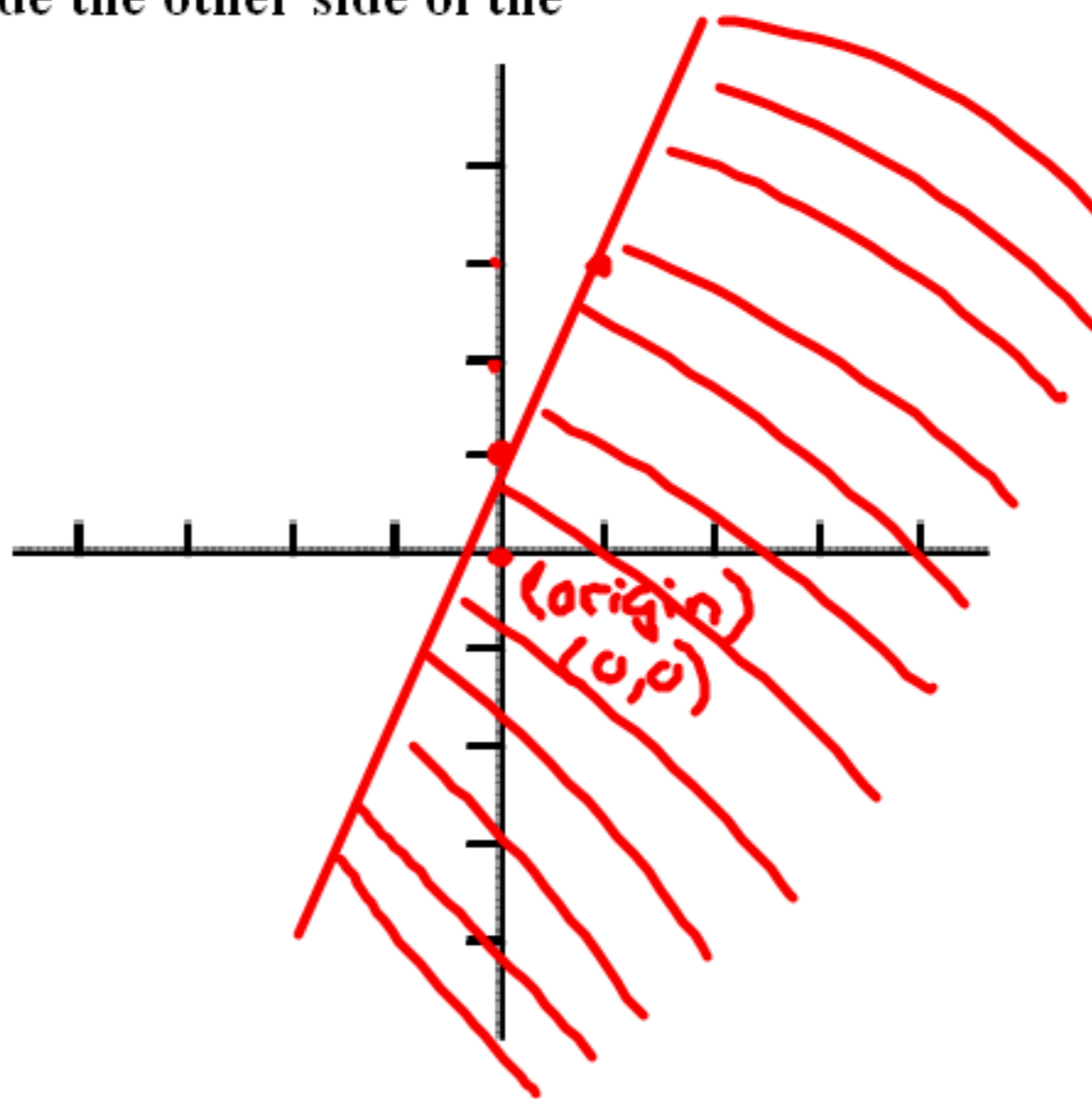
$$\text{Graph } y = 2x + 1$$

$$\geq \uparrow$$

$$! \rightarrow$$

$$0 \leq 2(0) + 1$$

$$0 \leq 1 \quad \text{TRUE} \rightarrow \text{Shade the origin side.}$$



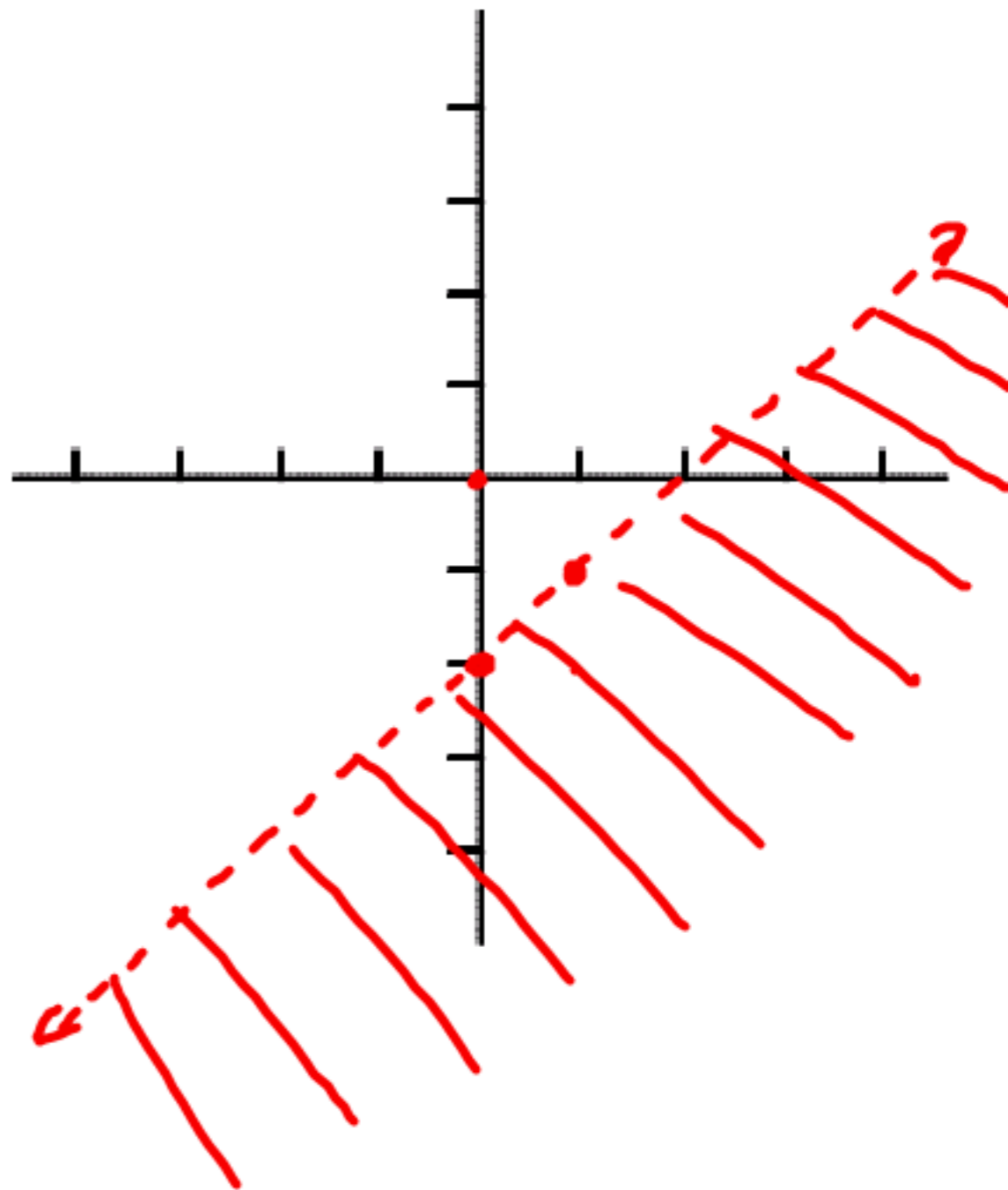
$y < x - 2$ dashed

$m = 1$ $\frac{1}{1}$ ↑
↓
→

$0 < 0 - 2$ ← plug in $(0, 0)$

$0 < -2$ FALSE

SHADE THE OTHER
SIDE

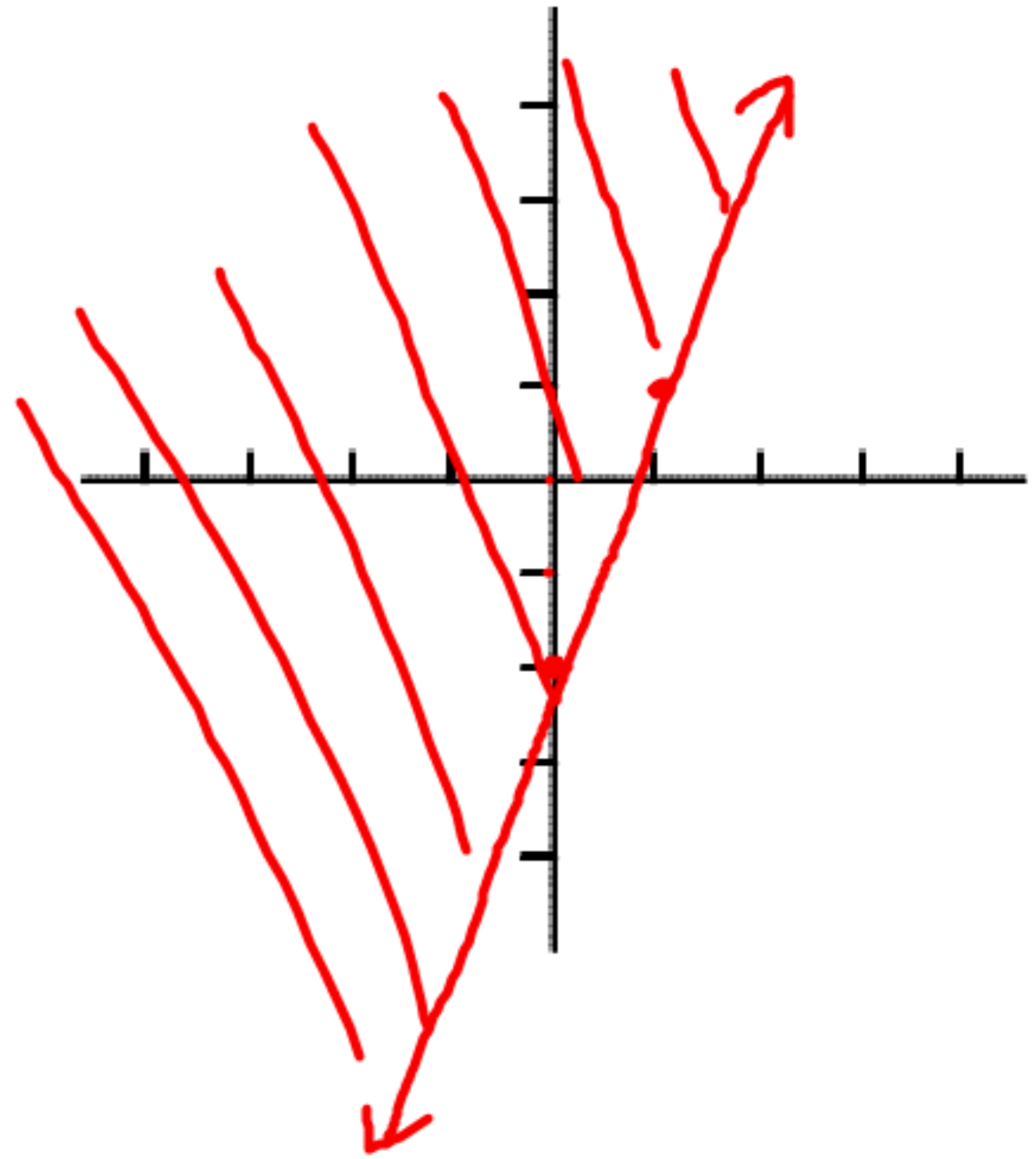


$$y + 2 \geq 3x \quad \text{solid}$$

$$\begin{array}{r} -2 \\ -2 \end{array} \\ y \geq 3x - 2$$

$$0 + 2 \geq 3(0)$$

$$2 \geq 0$$



GRAPHING ABSOLUTE VALUE INEQUALITIES

Graph the absolute value boundary line as if it were an absolute value equation. Then follow the same steps as linear inequalities.

STEPS:

1. Determine if the boundary line will be solid or dashed.
2. Graph the boundary "V".
3. Plug in (0, 0) for the x and y
4. If (0, 0) satisfies the inequality shade that side of the boundary line.
5. If (0, 0) does not satisfy the inequality, shade the other side of the boundary line.

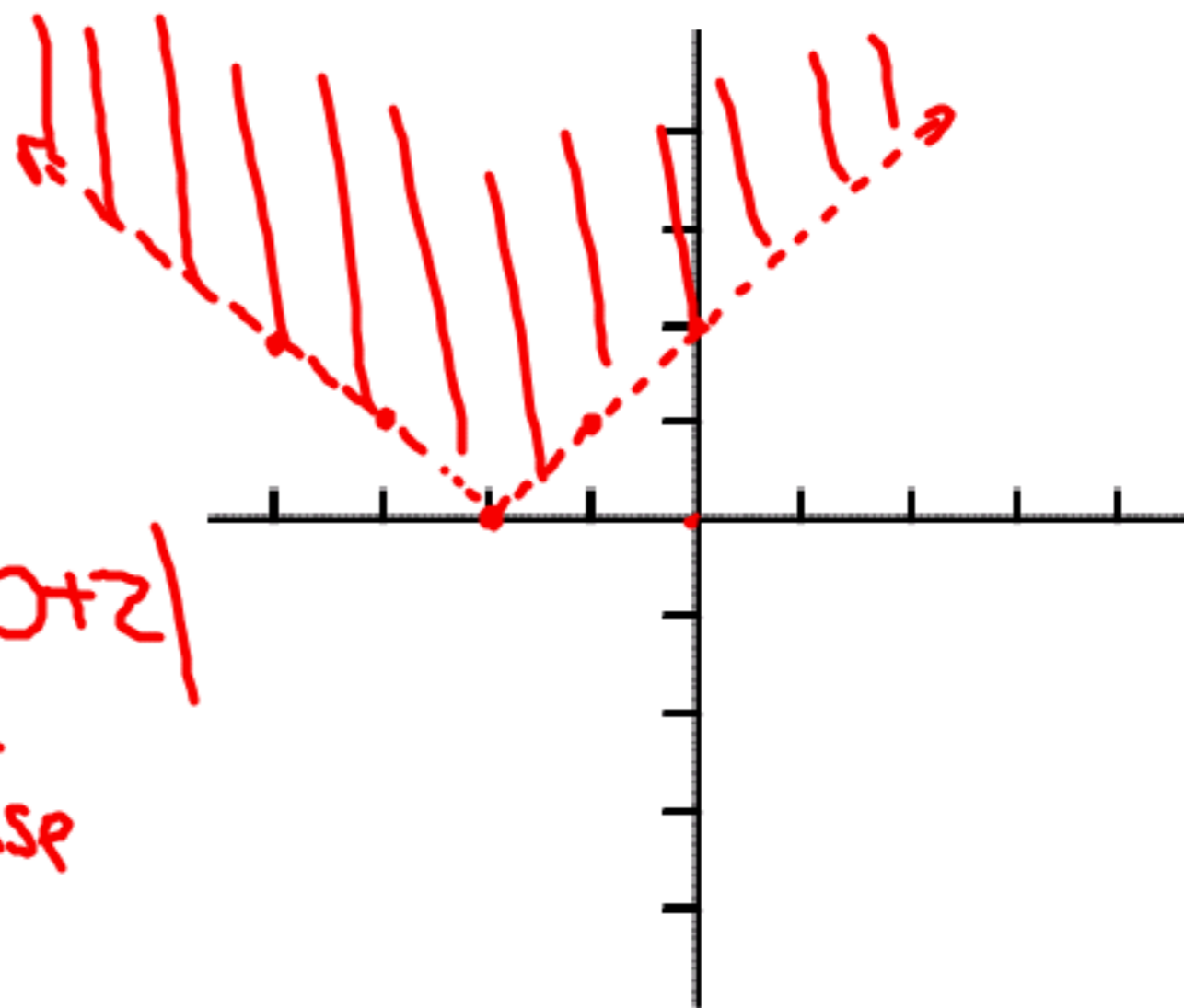
$$y > |x + 2| \quad \text{dashed}$$

find the middle x:

$$\begin{array}{r} x+2=0 \\ -2 \quad -2 \end{array} \quad \begin{array}{r} x=-2 \\ \text{middle} \end{array}$$

x	y
-4	$ -4+2 = 2$
-3	$ -3+2 = 1$
-2	$ -2+2 = 0$
-1	$ -1+2 = 1$
0	$ 0+2 = 2$

$$\begin{array}{l} 0 > |0+2| \\ 0 > 2 \\ \text{False} \end{array}$$



$$y < \underline{|x-2|} - 3 \quad \text{dashed}$$

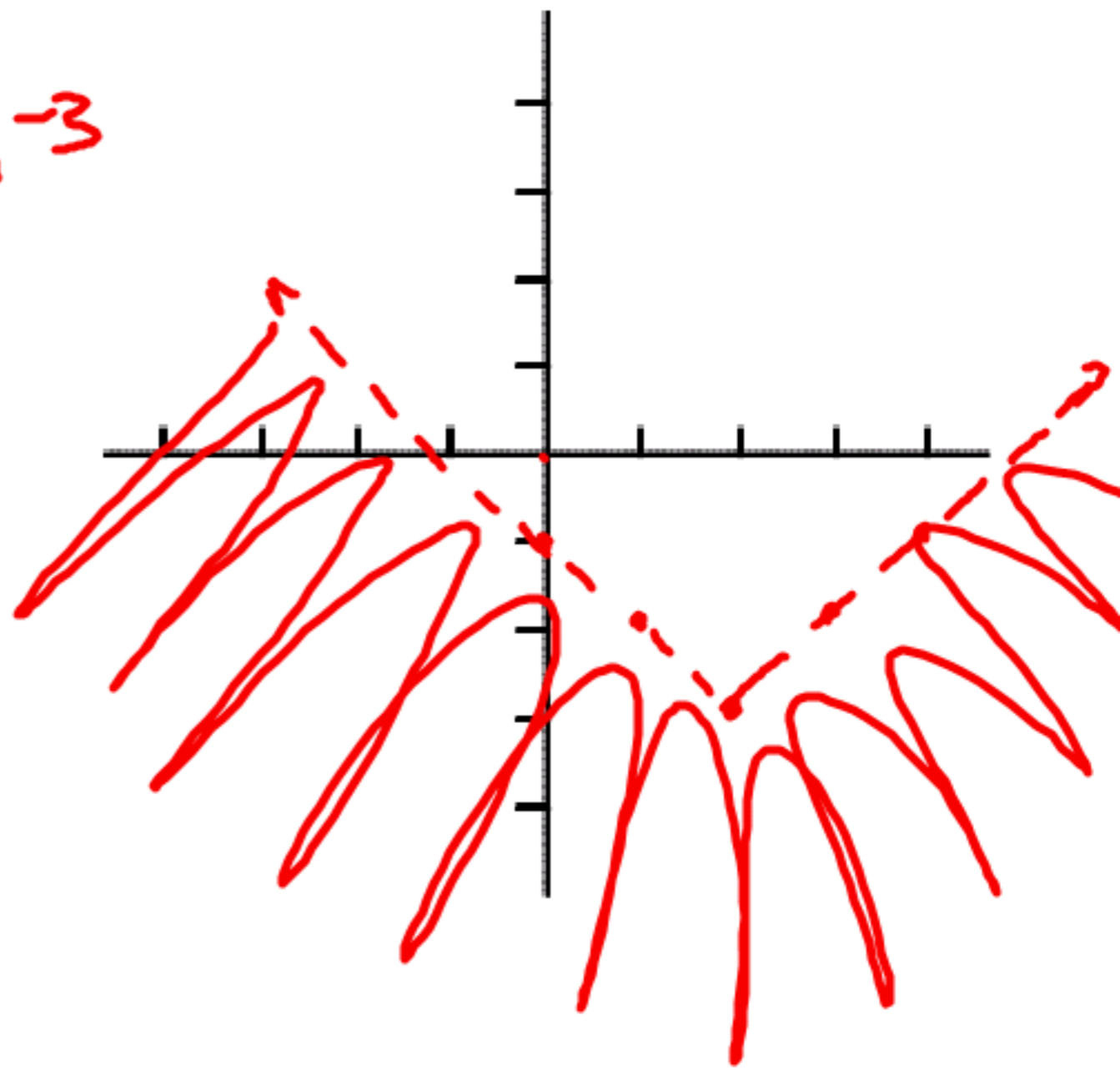
$$0 < |0-2| - 3$$

$$x-2 = 0$$
$$x = 2$$

$$0 < -1$$

False

x	y
0	$ 0-2 -3 = -1$
1	$ 1-2 -3 = -2$
2	$ 2-2 -3 = -3$
3	$ 3-2 -3 = -2$
4	$ 4-2 -3 = -1$



$$y + |x| < 2$$

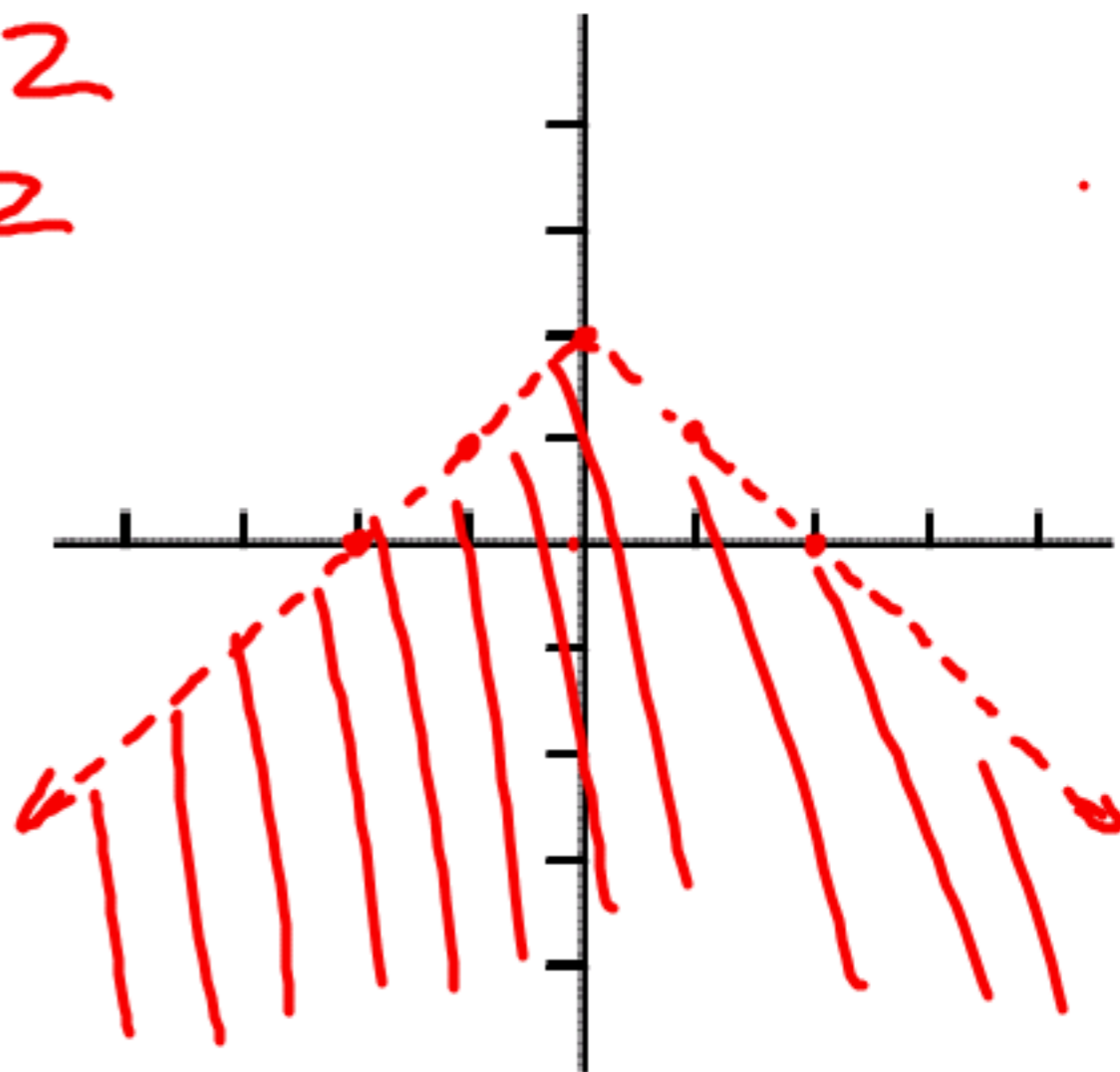
$$0 + |0| < 2$$

$$0 < 2$$

$$-|x| - |x|$$

$$y < -|x| + 2$$

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



98: 14-28 E

3 points each

- 1) solid dashed
- 2) Correct boundary line
- 3) Correct shading