Warm-Up:

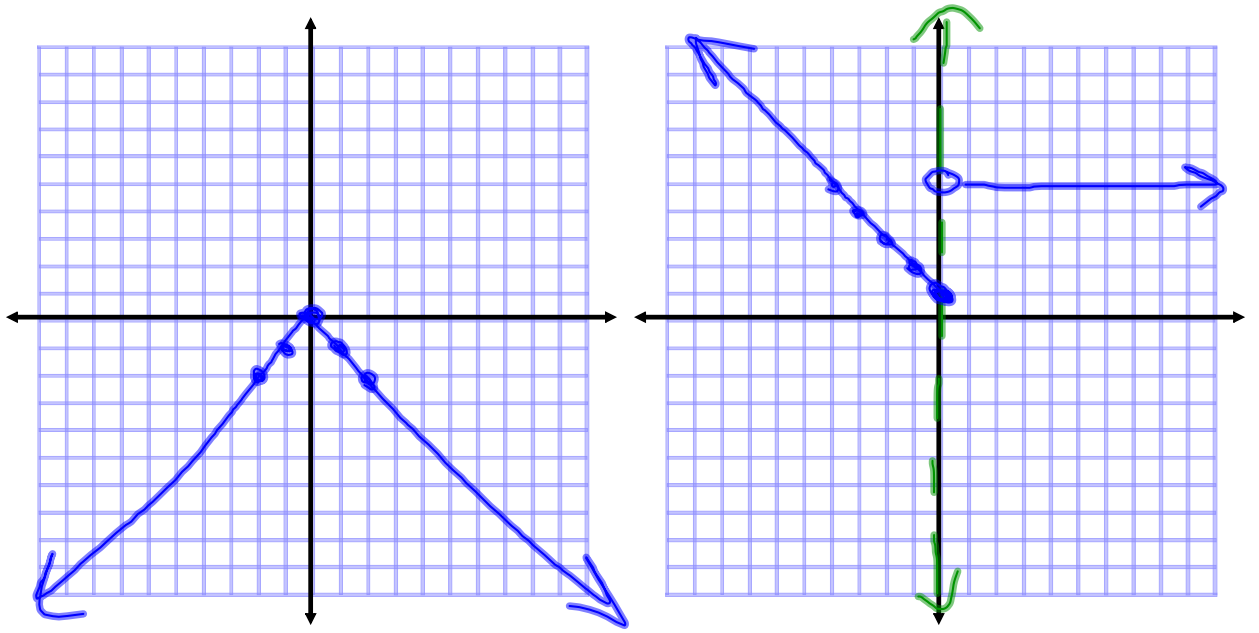
Graph.

1) $f(x) = -|x|$

2) $g(x) = \begin{cases} -x + 1 \text{ if } x \leq 0 \\ 5 \text{ if } x > 0 \end{cases}$

$y = -x + 1$

$y = 5$



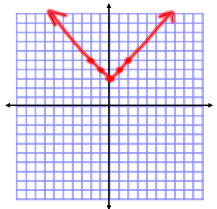
26, 46, 22

22) $g(x) = |x| + 3$

D: All Real #s

R: $y \geq 3$

x	g(x)
0	3
2	5
1	4
-1	4
-2	5



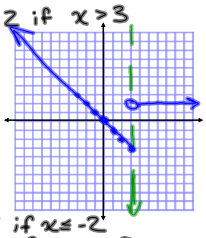
26) $f(x) = \begin{cases} -x \text{ if } x \leq 3 \\ 2 \text{ if } x > 3 \end{cases}$

$y = -x$

$y = 2$

D: All Real

R: $y \geq -3$



38) $g(x) = \begin{cases} -1 \text{ if } x \leq -2 \\ x \text{ if } -2 < x < 2 \\ -x+1 \text{ if } x \geq 2 \end{cases}$

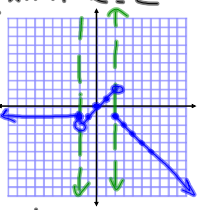
$y = x$

$y = -x + 1$

$(2, -1)$

D: All Real #s

R: $y < 2$



46) x = medical expenses

$f(x) = \begin{cases} 0 \text{ if } x \leq 300 \\ .8(x-300) \text{ if } x > 300 \end{cases}$

Section 2-7: Graphing Inequalities

When graphing an inequality, the line where the shading starts is called the boundary.

To graph an inequality, follow these steps:

(1) Graph as if the inequality symbol was an equal sign.

(2) If the inequality symbol is also an "equal to" the boundary is solid. If it is not an "equal to" the boundary is dashed.

(3) Pick a point not on the boundary (the origin is usually the best) and test to see if that side is the section with all the solutions.

Examples:
Graph.
1) $x - 2y < 4$

$(0,0)$

$0 - 2(0) < 4$

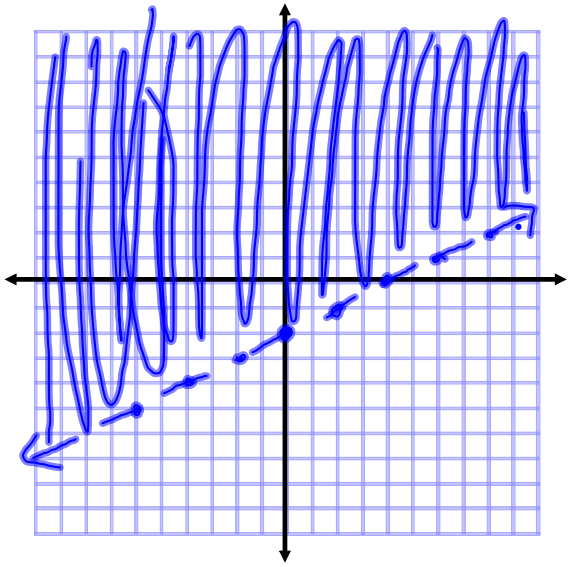
$0 < 4$

$x - 2y = 4$

$-x \quad -x$

$\frac{-2y}{-2} = \frac{-x}{-2} + \frac{4}{-2}$

$y = \frac{1}{2}x - 2$



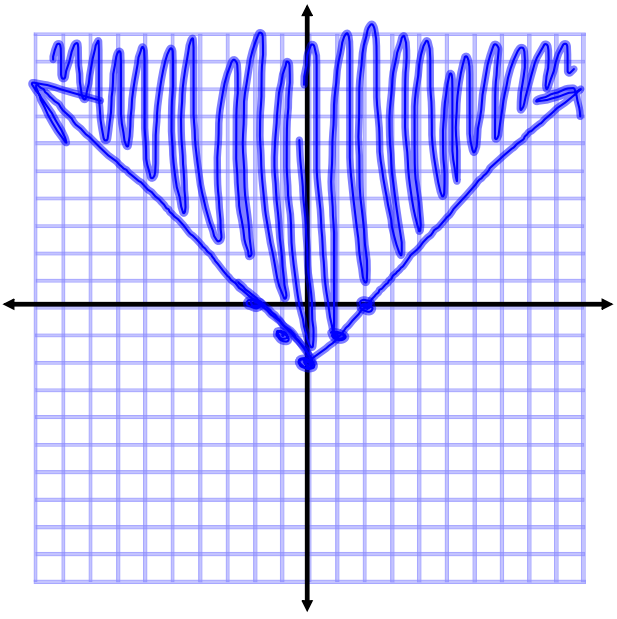
Examples:
2) $y \geq |x| - 2$

$y = |x| - 2$

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

$0 \geq |0| - 2$

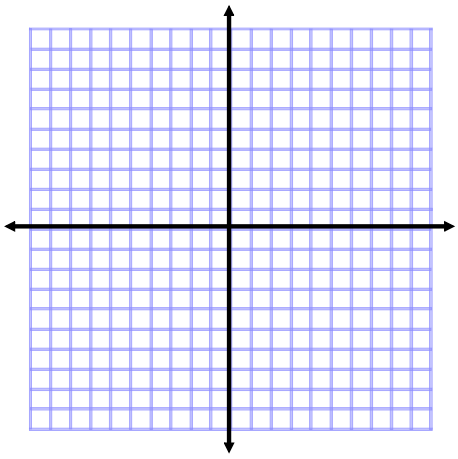
$0 \geq -2$



Examples:
3) One tutoring company advertises that it specializes in helping students who have a combined SAT verbal and math score of 900 or less.

a) Write an inequality to describe the combined scores of students who are prospective tutoring clients. Let x represent the verbal score and y the math score.

b) Graph the inequality.



c) Does a student with a verbal score of 480 and a math score of 410 fit the tutoring company's guidelines?

Homework: pg. 104-105 #10-20 even, 22-26 all, 42, 43

Quiz 2-5, 2-6 Next Class

Ch. 2 Test Tuesday October 5