

2.8 Graph Linear Inequalities in Two Variables

EXAMPLE 1

Which ordered pair is a solution of $3x + 4y > 8$?

(A) $(6, -3)$

~~$3(6) + 4(-3) > 8$
 $18 - 12 > 8$
 $6 > 8$~~

(B) $(0, 2)$

~~$3(0) + 4(2) > 8$
 $8 > 8$~~

(C) $(-2, -1)$

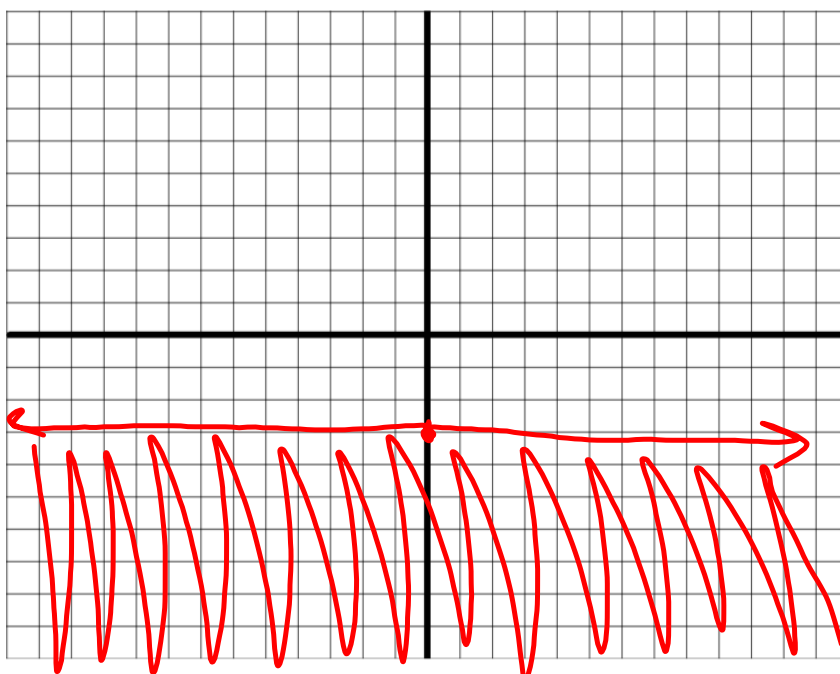
~~$3(-2) + 4(-1) > 8$
 $-6 - 4 > 8$
 $-10 > 8$~~

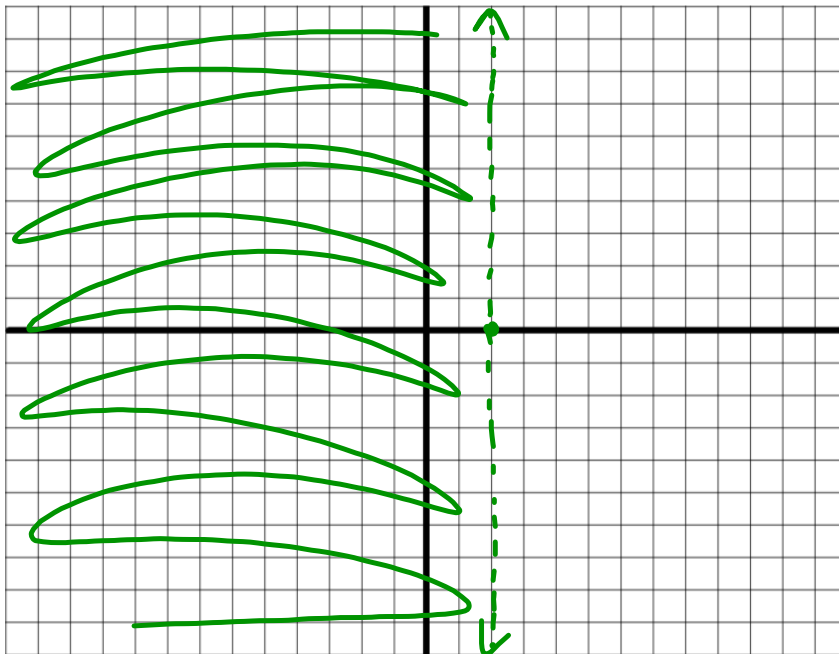
(D) $(-3, 5)$

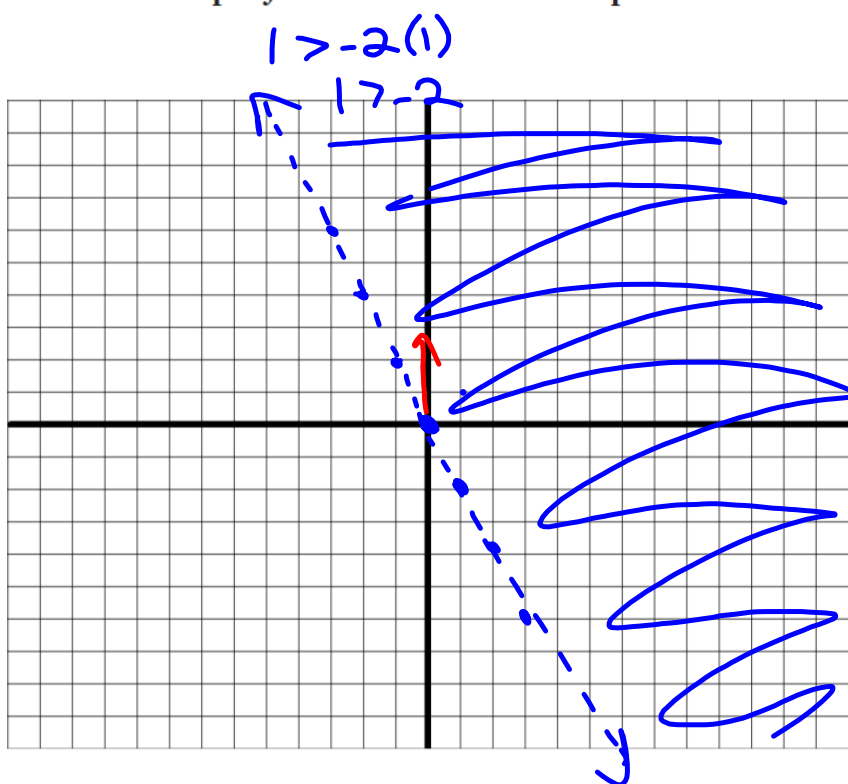
$3(-3) + 4(5) > 8$
 $-9 + 20 > 8$
 $11 > 8$

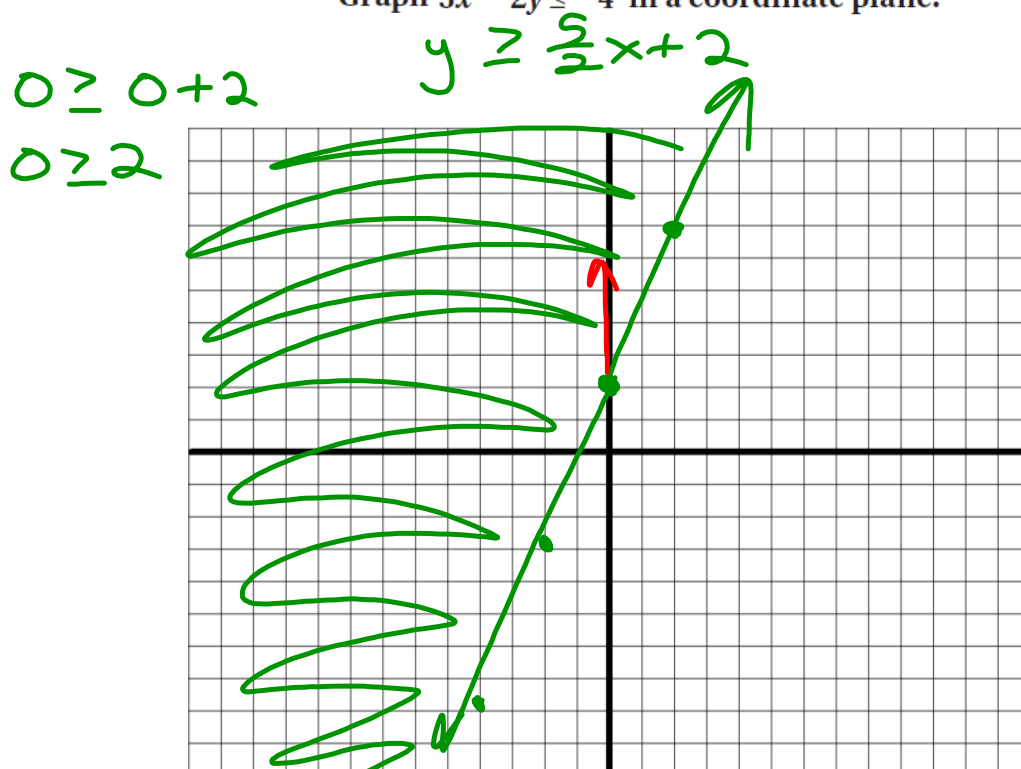
EXAMPLE 2 Graph linear inequalities with one variable

Graph $y \leq -3$ in a coordinate plane.



EXAMPLE 2 Graph linear inequalities with one variableGraph $x < 2$ in a coordinate plane.

EXAMPLE 3 Graph linear inequalities with two variablesGraph $y > -2x$ in a coordinate plane.

EXAMPLE 3 Graph linear inequalities with two variablesGraph $5x - 2y \leq -4$ in a coordinate plane.

EXAMPLE 5 Graph an absolute value inequality

Graph the inequality in a coordinate plane.

$$0 \geq -|0+3| - 2$$

$$0 \geq -3 - 2$$

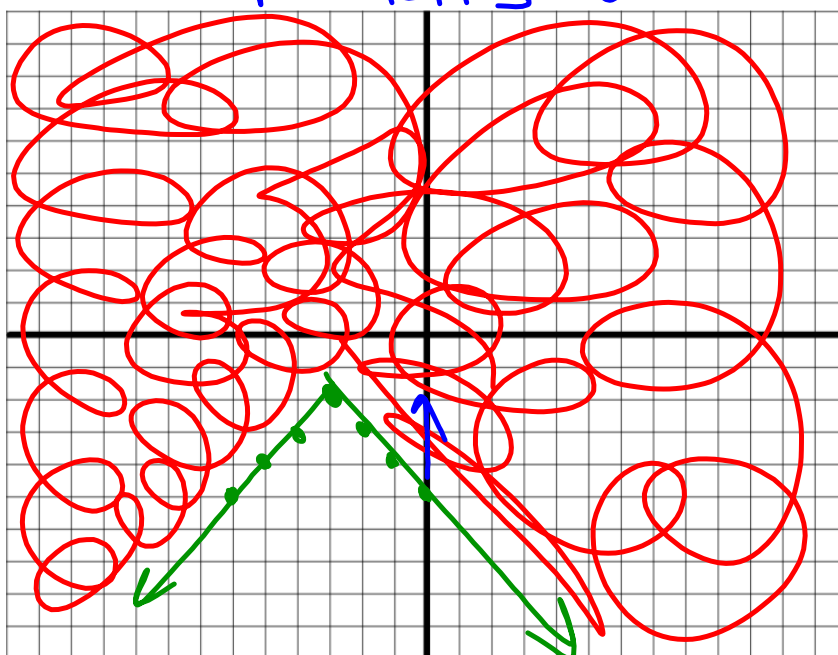
$$0 \geq -5$$

$$y \geq -|x+3| - 2$$

flip

left + 3

down 2



EXAMPLE 5 Graph an absolute value inequalityGraph $y > -2|x - 3| + 4$ in a coordinate plane. $h = 3$
vertex $(3, 4)$
 $m = -2$ 