

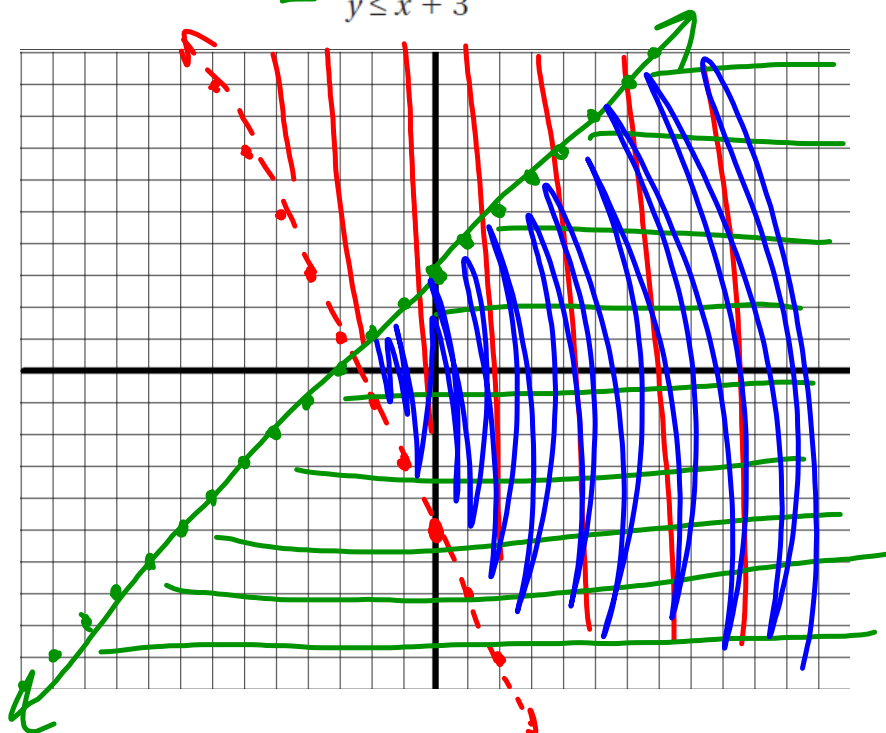
3.3 Graph Systems of Linear Inequalities

EXAMPLE 1 Graph a system of two inequalities

Graph the system of inequalities.

— $y > -2x - 5$

— $y \leq x + 3$



EXAMPLE 2 Graph a system with no solution

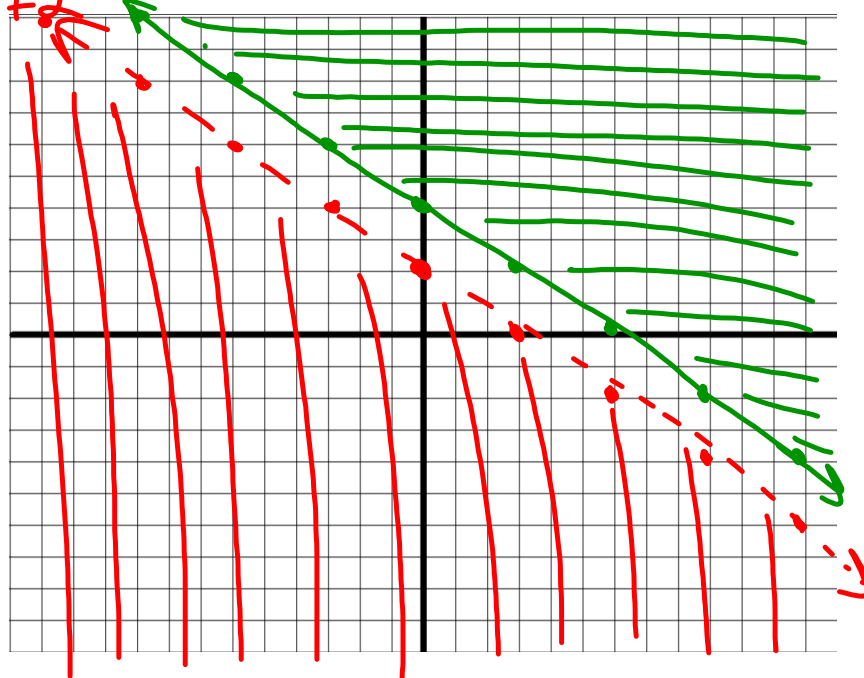
Graph the system of inequalities.

$$2x + 3y < 6$$

$$y \geq -\frac{2}{3}x + 4$$

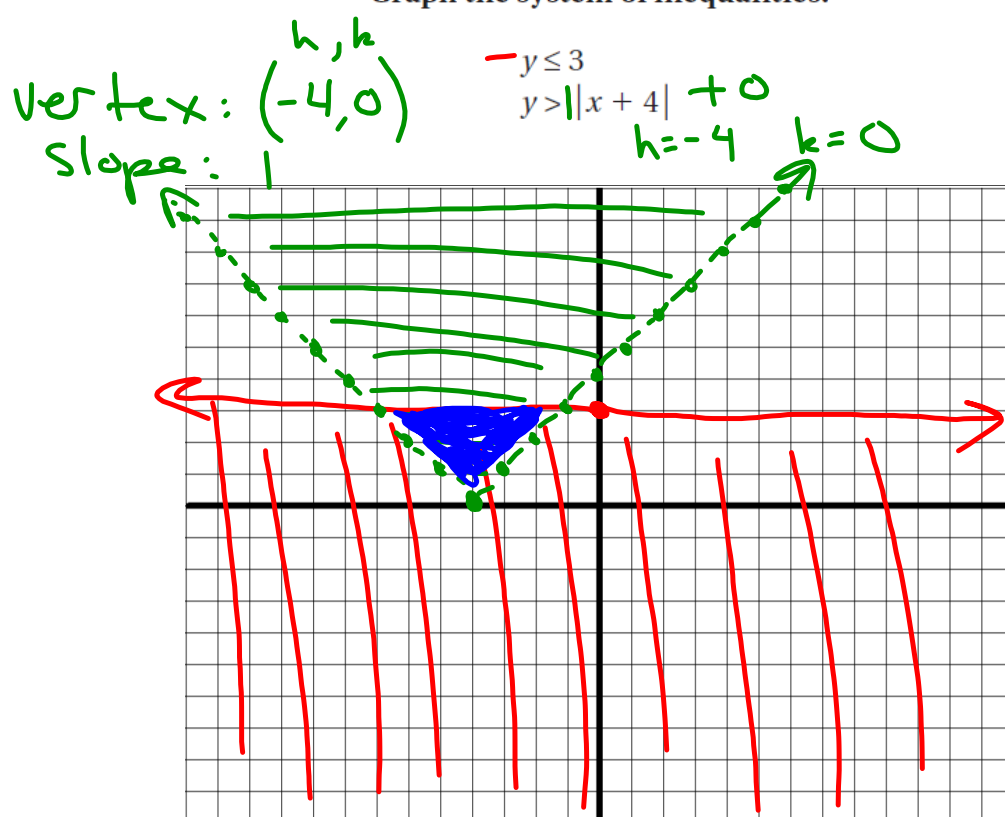
$$\frac{3y}{3} < \frac{-2x+6}{3}$$

$$y < -\frac{2}{3}x + 2$$



EXAMPLE 3 Graph a system with an absolute value inequality

Graph the system of inequalities.



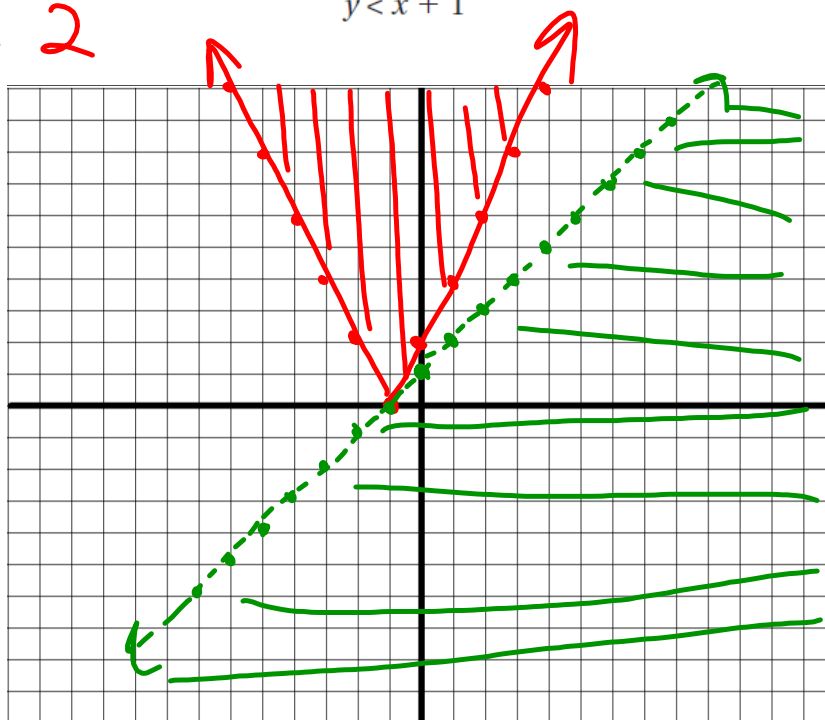
EXAMPLE 3 Graph a system with an absolute value inequality

Graph the system of inequalities.

Vertex: $(-1, 0)$

Slope: 2

$$y \geq 2|x + 1| + 0$$
$$y < x + 1$$



SYSTEMS OF TWO INEQUALITIES Graph the system of inequalities.

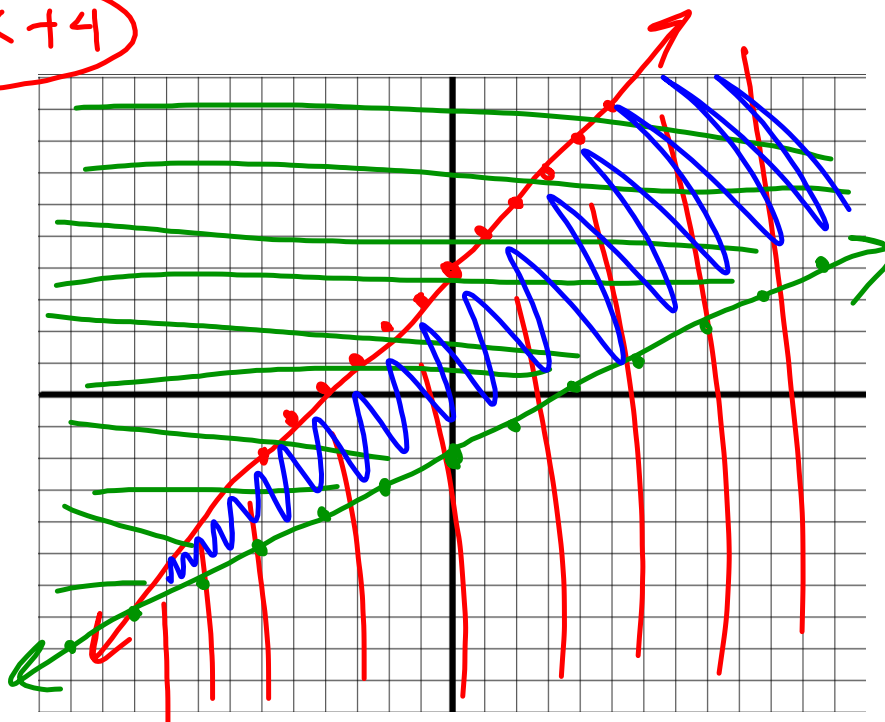
9. $4x - 4y \geq -16$
 $-x + 2y \geq -4$

$$2y \geq \frac{x}{2} - \frac{4}{2}$$

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

$$\frac{-4}{-4}y \geq \frac{-4}{-4}x - \frac{16}{-4}$$

$$y \leq x + 4$$



SYSTEMS OF THREE OR MORE INEQUALITIES Graph the system of inequalities.

21. $x \geq 2$
 $-3x + y < -1$
 $4x + 3y < 12$

$y < 3x - 1$

$3y < -4x + 12$

$y < -\frac{4}{3}x + 4$

