

1.9 Do Now: Graphing inequalities

1. Graph and label the two equations. Mark their intersection as an ordered pair.

$$y \geq \frac{1}{2}x - 5$$

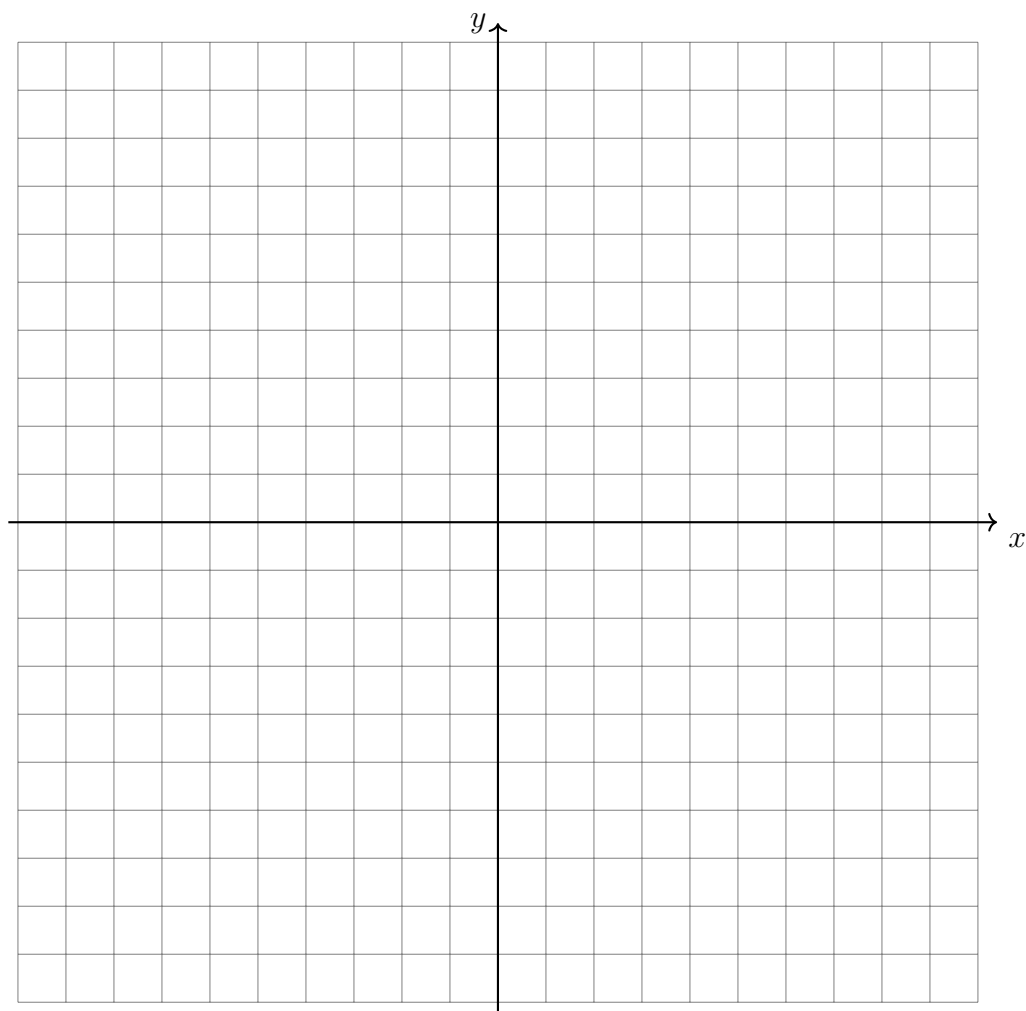
$$x + y \geq 4$$

Write down the slope and y -intercept
of the first equation.

Write as slope-intercept form, $y = mx + b$.

(a) $m =$

(b) $b =$



For each equation, lightly shade the side of the line that satisfies the inequality.

2. Each quadratic equation has been factored as the first step to solve x . Complete each solution.

(a) $x^2 + 4x - 5 = 0$

(b) $x^2 - 6x + 9 = 0$

Solution (first step):

$$(x + 5)(x - 1) = 0$$

Solution (first step):

$$(x - 3)(x - 3) = 0$$

3. Factor each equation and solve for the values of x .

(a) $x^2 - 6x + 5 = 0$

(b) $x^2 + 6x + 8 = 0$

Quadratic formula: For $ax^2 + bx + c = 0$, $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

4. Solve using the quadratic formula. (example given)

(a) $2x^2 + 5x + 2 = 0$

(b) $3x^2 + 4x - 1 = 0$

Solution:

$$x = \frac{-5 \pm \sqrt{25 - 16}}{4}$$

$$x = \frac{-5 \pm \sqrt{9}}{4}$$

$$x = \frac{-5 \pm 3}{4}$$

$$x = \frac{-2}{4} \quad \text{or} \quad x = \frac{-8}{4}$$

$$x = -\frac{1}{2} \quad \text{or} \quad x = -2$$