BECA / Dr. Huson / Regents Prep: Graphs   First and last name:
28 October 2024   Section:

1.6 Do Now: Graphing lines and finding intersections

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

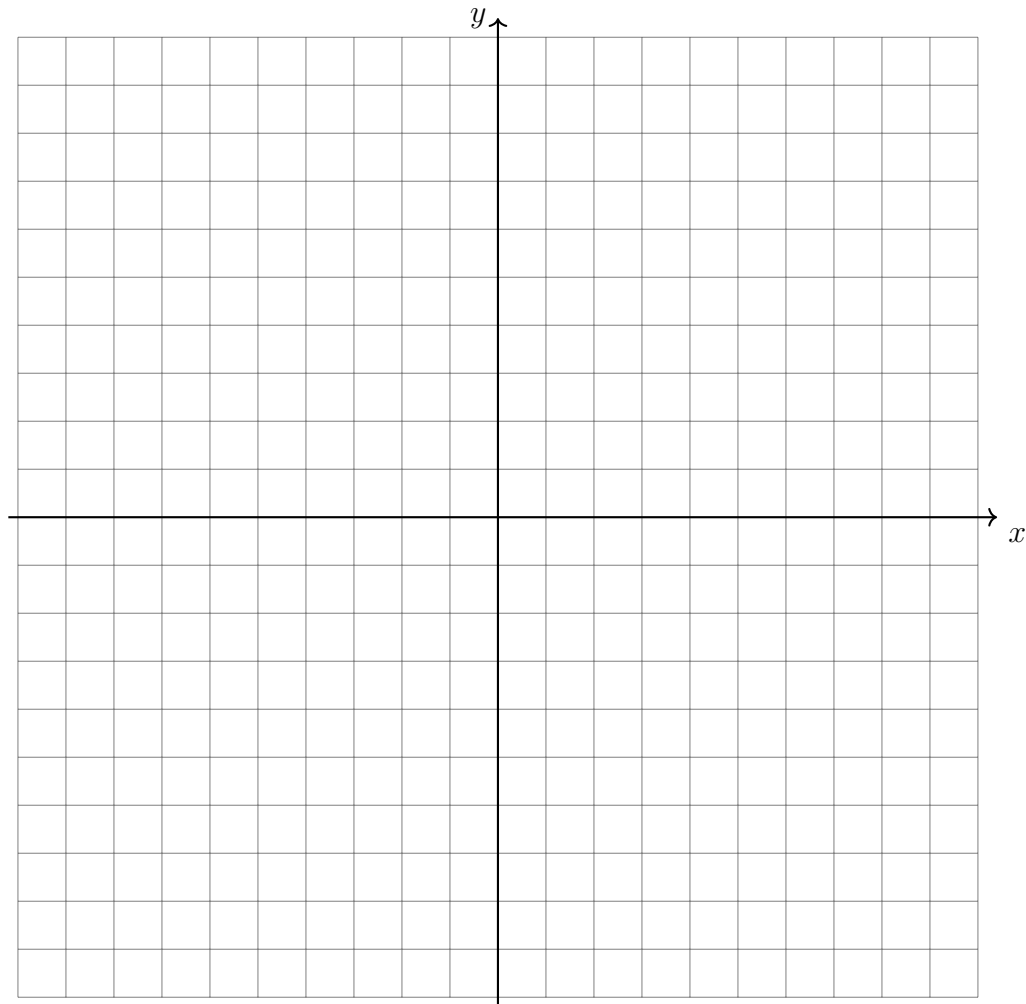$y = x + 5$ $x + 2y = -8$

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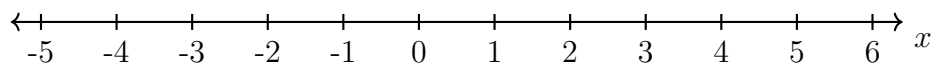of the first equation.

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

(a) $m =$

(b) $b =$

2. Graph on the number line the inequality $x \geq 3$. Mark the circle at 3 as a solid dot.

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

(a) $x^2 + 7x + 12 = 0$

Solution (first step):
$(x + 3)(x + 4) = 0$

(b) $x^2 - 8x + 15 = 0$

Solution (first step):
$(x - 3)(x - 5) = 0$

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

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

(b) $x^2 - 4x - 12 = 0$

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

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

(a) $3x^2 + 7x + 2 = 0$

(b) $2x^2 + 9x + 4 = 0$

Solution:

$$x = \frac{-7 \pm \sqrt{49 - 24}}{6}$$

$$x = \frac{-7 \pm \sqrt{25}}{6}$$

$$x = \frac{-7 \pm 5}{6}$$

$$x = \frac{-2}{6} \quad \text{or} \quad x = \frac{-12}{6}$$

$$x = -\frac{1}{3} \quad \text{or} \quad x = -2$$