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

1.8 Do Now: Graphing lines and finding intersections

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

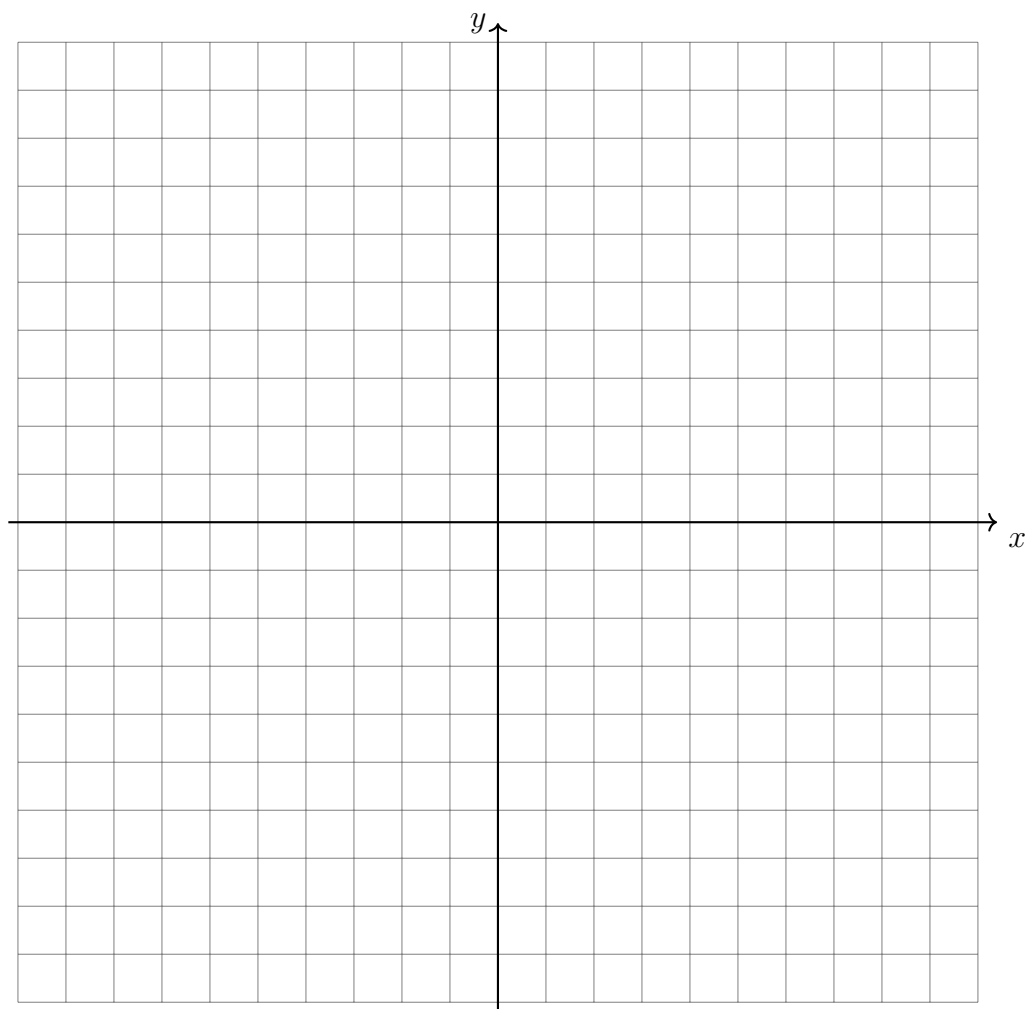$y = \frac{1}{2}x - 3$ $2x + y = 7$

Write down the slope and y-intercept
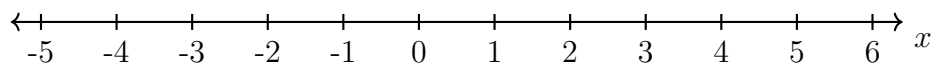of the first equation.   Write as slope-intercept form, $y = mx + b$.

(a) $m =$

(b) $b =$

2. Graph on the number line the inequality $x \geq -2$.

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

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

Solution (first step):
$(x + 6)(x - 1) = 0$

(b) $x^2 - 12x + 11 = 0$

Solution (first step):
$(x - 1)(x - 11) = 0$

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

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

(b) $x^2 + 7x + 10 = 0$

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) $2x^2 + 3x + 1 = 0$

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

Solution:

$$x = \frac{-3 \pm \sqrt{9 - 8}}{4}$$

$$x = \frac{-3 \pm \sqrt{1}}{4}$$

$$x = \frac{-3 \pm 1}{4}$$

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

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