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

1.7 Do Now: Graphing lines and finding intersections

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

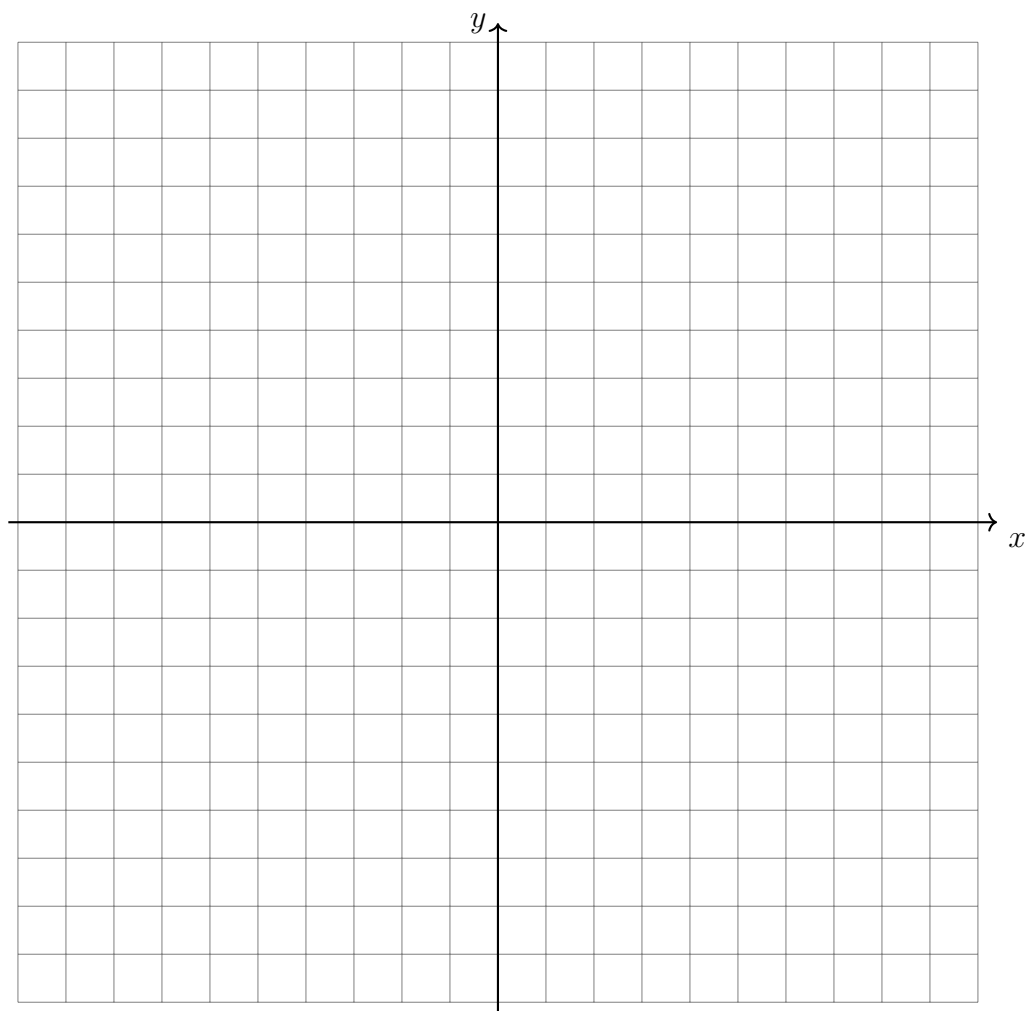$y = -\frac{1}{4}x + 2$ $3x + 2y = -6$

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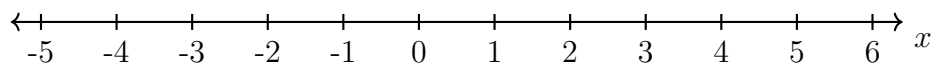of the first equation.   Write as slope-intercept form, $y = mx + b$.

(a) $m =$

(b) $b =$

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

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

(a) $x^2 + 6x - 7 = 0$

    Solution (first step):
    $(x + 7)(x - 1) = 0$

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

    Solution (first step):
    $(x - 2)(x - 4) = 0$

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

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

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

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

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

    Solution:

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

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

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

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

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