# 3.1 Standard Form Equations of Lines

Algebra 1          Name: **Solutions**          **Practice**

**Circle all the ordered pairs $(x, y)$ that are solutions to the given equation.**

| 1. $3x + 5y = 10$ | 2. $x - 2y = 4$ |
|---|---|
| $(10, 4)$  $(2, 0)$  ⟨$(5, -1)$⟩  $(1, 1)$  ⟨$(0, 2)$⟩ | $(0, -1)$  ⟨$(6, 1)$⟩  $(1, 8)$  ⟨$(-4, -4)$⟩  $(3, 12)$ |

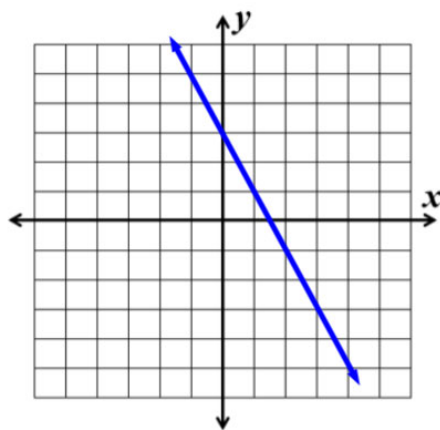| 3. $7y - 2x = -1$ | 4. $10x + 2y = -2$ |
|---|---|
| ⟨$(11, 3)$⟩  $(0, 1)$  $(1, -8)$  $(-5, 1)$  ⟨$(4, 1)$⟩ | $(-1, 5)$  ⟨$(2, -11)$⟩  $(-3, 10)$  $(4, 10)$  $(-5, 10)$ |

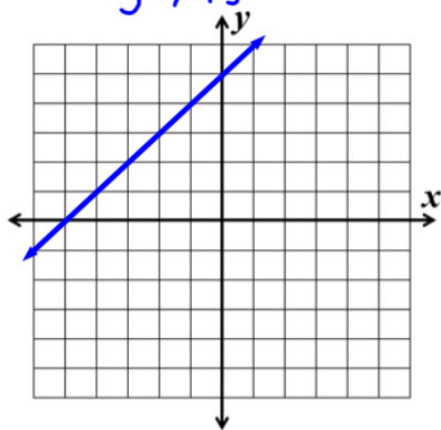**Graphing Standard Form.  Solve for $y$, then graph.**
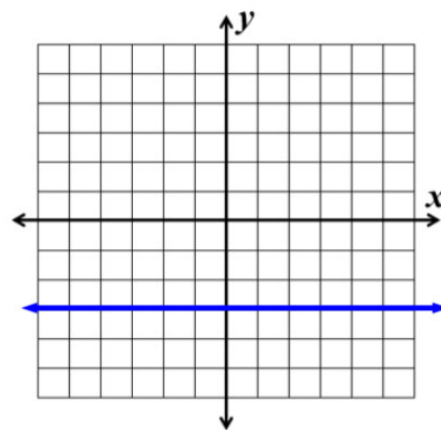
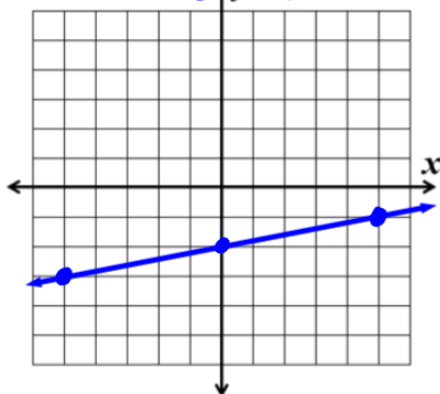**5.** $2x + y = 3$

$$y = -2x + 3$$

**6.** $x - y = -5$

$$\frac{-y}{-1} = \frac{-x}{-1} \frac{-5}{-1}$$
$$y = x + 5$$

**7.** $y = -3$

**8.** $x - 5y = 10$

$$\frac{-5y}{-5} = \frac{-x}{-5} + \frac{10}{-5}$$
$$y = \tfrac{1}{5}x - 2$$
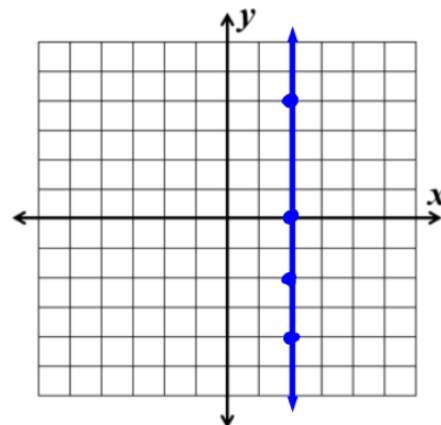
**9.** $4y - 3x = 16$

$$\frac{4y}{4} = \frac{3x}{4} + \frac{16}{4}$$
$$y = \tfrac{3}{4}x + 4$$

**10.** $x = 2$

**Graphing Standard Form. Find the $x$- and $y$-intercepts, then graph.**
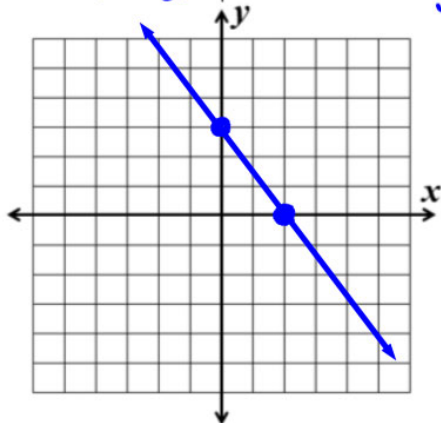
11. $3x + 2y = 6$

_$x$-intercept_

$(?, 0)$
$3x + 2(0) = 6$
$x = 2$
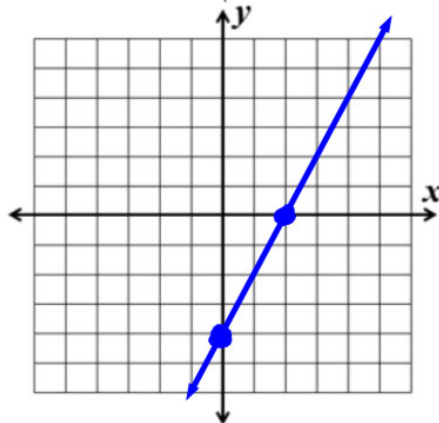
_$y$-intercept_

$(0, ?)$
$3(0) + 2y = 6$
$y = 3$

12. $2x - y = 4$

_$x$-intercept_

$(?, 0)$ $2x - 0 = 4$
$x = 2$
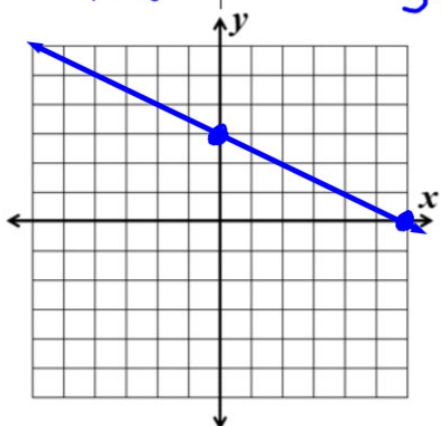
_$y$-intercept_

$(0, ?)$ $2(0) - y = 4$
$y = -4$

13. $x + 2y = 6$

_$x$-intercept_

$(?, 0)$
$x + 2(0) = 6$
$x = 6$

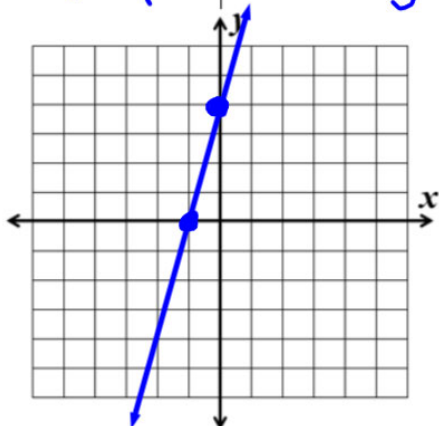_$y$-intercept_

$(0, ?)$
$0 + 2y = 6$
$y = 3$

14. $y - 4x = 4$

_$x$-intercept_

$(?, 0)$
$0 - 4x = 4$
$x = -1$

_$y$-intercept_

$(0, ?)$
$y - 4(0) = 4$
$y = 4$

**Determine what value(s) for the given variable will make the following equations true. (use mental math)**

15. $(x - 3)^2 = 25$

$-2, 8$

16. $\frac{x+2}{x^2+1} = \frac{6}{17}$

$4$

17. $g^2 - 5 = -1$

$-2, 2$

**Solve each equation. Put your solution in set notation.**

18. $-5x - 8(2x - 8) = -104.$

$-5x - 16x + 64 = -104$
$-21x + 64 = -104$
$\phantom{-21x}\ -64\quad -64$
$-21x = -168$
$\overline{-21}\qquad \overline{-21}$
$x = 8$

19. $-4 + \frac{n+4}{5} = -6$

$+4 \qquad +4$

$5 \cdot \frac{n+4}{5} = -2 \cdot 5$

$n + 4 = -10$
$\phantom{n}\ -4 \qquad -4$
$n = -14$