Algebra 1 3.1

Identify linear equations, intercepts, and zeros

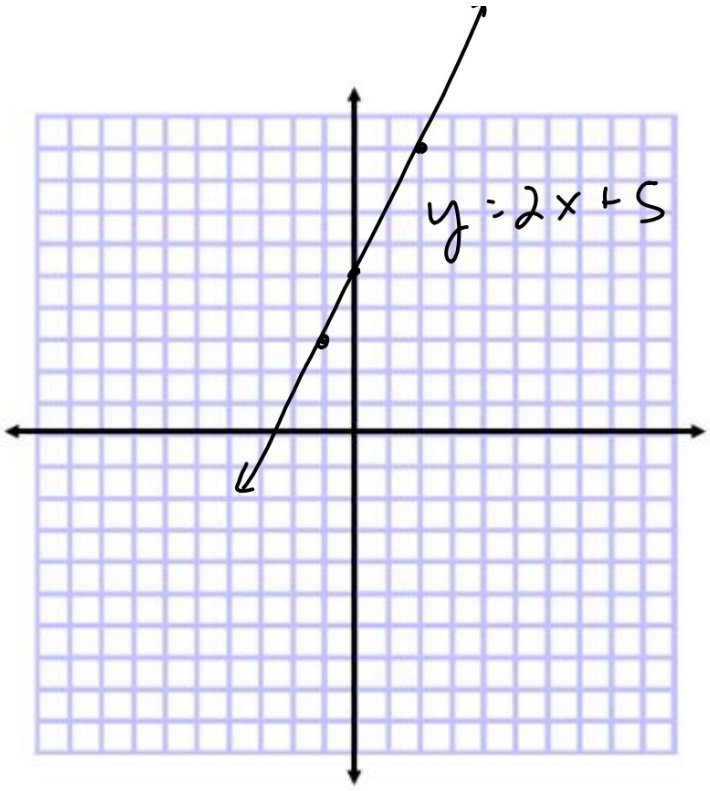
Graph linear equations

integer
linear equation
standard form
constant
variable
x-intercept
y-intercept

whiteboards

$y = 2x + 5$

	$2x+5$	
2	$2 \cdot 2 + 5$	9
-1	$2 \cdot -1 + 5$	3
10	$2 \cdot 10 + 5$	25
0	$2 \cdot 0 + 5$	5



$3x + 4y = 6$

y-int

$(0, 1.5)$

$\frac{4y}{4} = \frac{6}{4}$

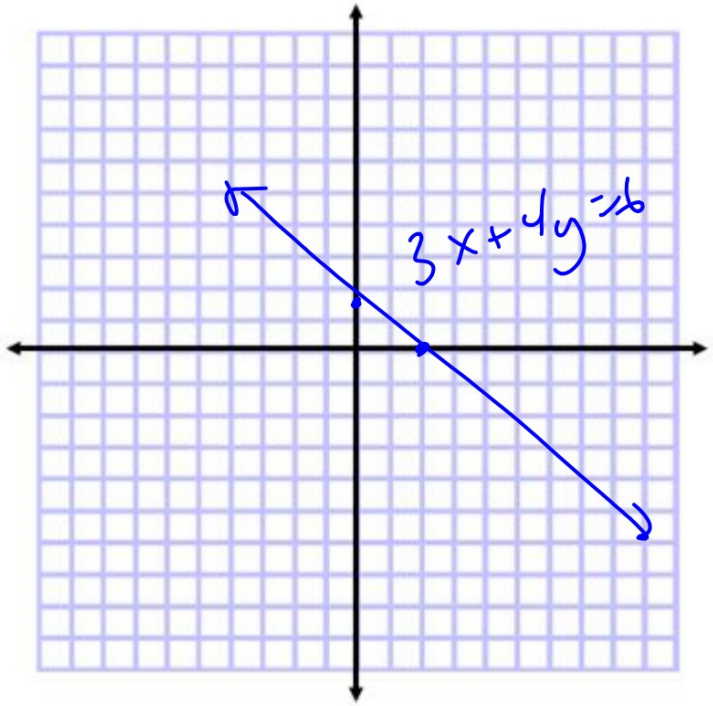
$y = 1.5$

$(2, 0)$

x-int

$\frac{3x}{3} = \frac{6}{3}$

$x = 2$



$Ax + By = C$

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

$+\frac{1}{4}x \qquad +\frac{1}{4}x$

$4\left(\frac{1}{4}x + y = 4 \cdot 2\right)$

$4 \cdot \frac{1}{4} \quad 4 \cdot 1 \quad 4 \cdot 2$

$x + 4y = 8$

$A = 2$

$B = -3$

$C = -3$

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

$-\frac{2}{3}x \qquad -\frac{2}{3}x$

$3 \cdot \left(-\frac{2}{3}x + y = 1\right)$

$3 \cdot -\frac{2}{3} \quad 3 \cdot 1 \quad 3 \cdot 1$

$-2x + 3y = 3$

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

$2x - 3y = -3$

KeyConcept Standard Form of a Linear Equation

Words	The standard form of a linear equation is $Ax + By = C$, where $A \geq 0$, A and B are not both zero, and A, B, and C are integers with a greatest common factor of 1.
Examples	In $3x + 2y = 5$, $A = 3$, $B = 2$, and $C = 5$. In $x = -7$, $A = 1$, $B = 0$, and $C = -7$.

$Ax + By = C$

$A =$ $B =$ $C =$

1. Format
2. GCF
3. Pos x

$5x = 2y + 3$

$-2y \quad -2y$

$5x - 2y = 3$

$A = 5$

$B = -2$

$C = 3$

Practice standard form

Std. form

$y = -2x + 4$

$y = 3x + 5$

A=

$2x = y - 6$

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

B=

C=

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

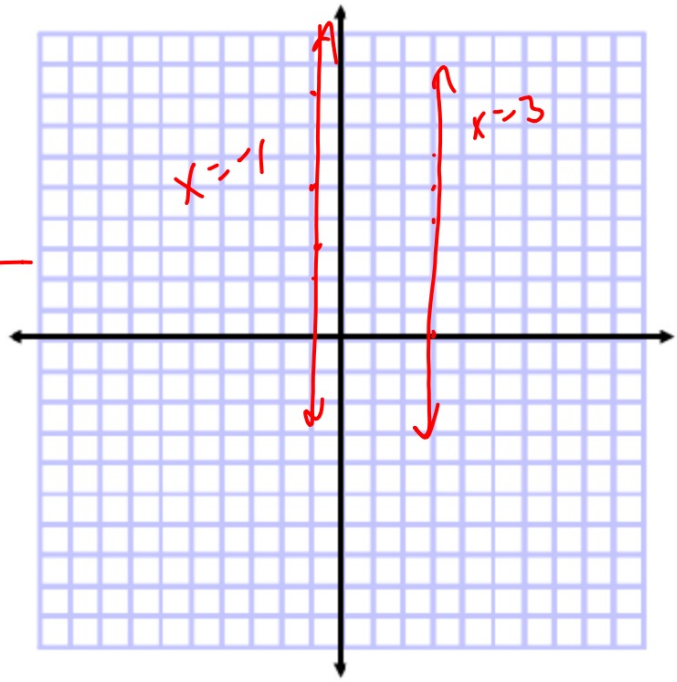
You can only choose 3 for x

5B. $x = 3$

$X = -1$

3	4
3	5
3	6
3	0

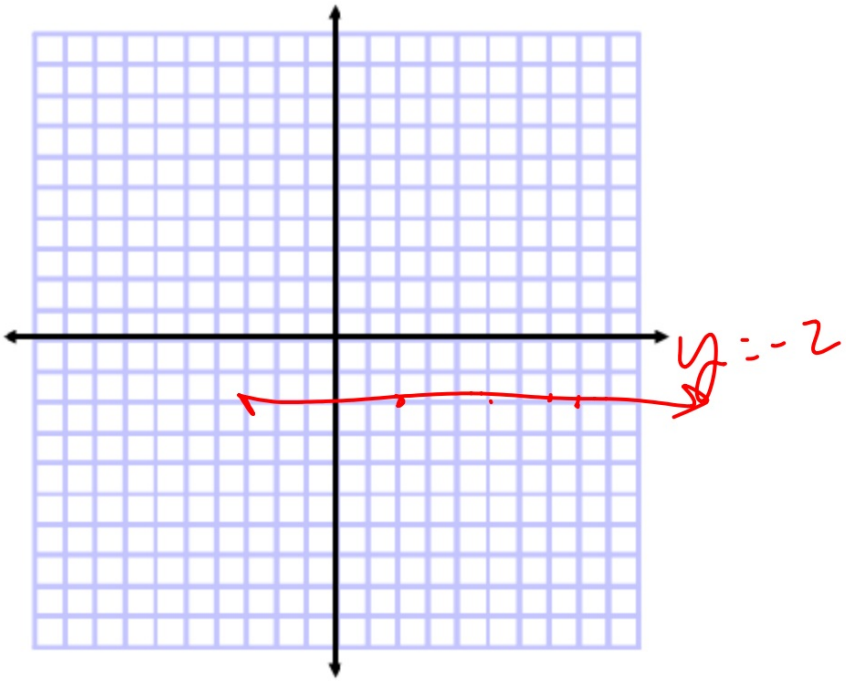
-1	3
-1	2
-1	8
-1	5

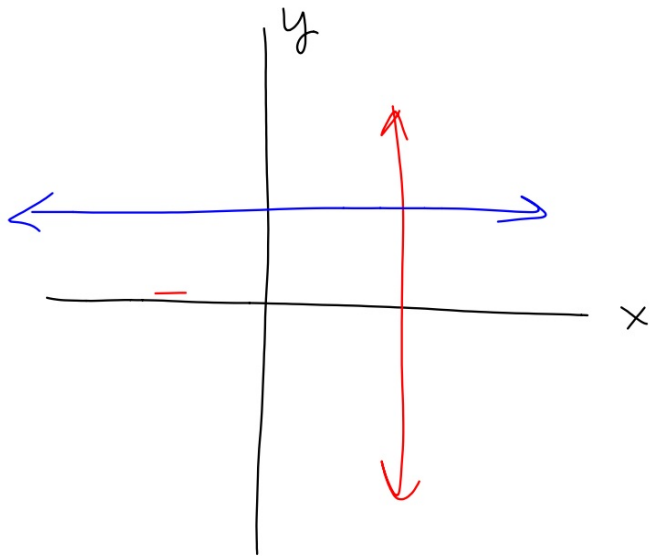


You will get -2 for y, no matter what.

5C. $y = -2$

2	-2
8	-2
5	-2
7	-2




y
x