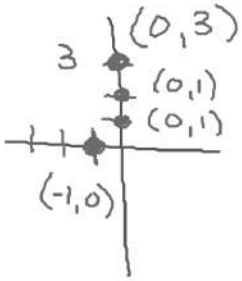
2.3 STANDARD FORM $Ax + By = C$

Notes



Find the x and y intercept

(1) $3x + 4y = 12$

y-intercept: $x = 0$

$\frac{4y}{4} = \frac{12}{4}$

$y = 3$ y-int → $(0,3)$

x-intercept: $y = 0$

$3x = 12$

$x = 4$ x-int → $(4,0)$

A, B, C → Constants

↳ No Fractions
No Decimals

A value is always positive

x and y terms are on same side

x-int: Cover up y

y-int: Cover up x

(2) $5x - 9y = -45$

x-int: $\frac{5x}{5} = \frac{-45}{5}$

$x = -9$

$(-9, 0)$

y-int: $\frac{-9y}{-9} = \frac{-45}{-9}$

$y = 5$ $(0, 5)$

$3x + 5y = 17$

x-int: $\frac{3x}{3} = \frac{17}{3}$

$x = \frac{17}{3}$ $\left(\frac{17}{3}, 0\right)$

y-int: $\frac{5y}{5} = \frac{17}{5}$

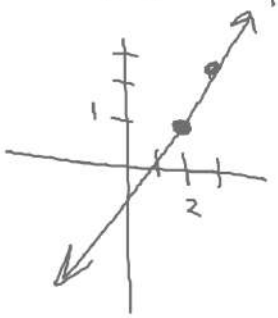
$y = \frac{17}{5}$ $\left(0, \frac{17}{5}\right)$

Notes | Sketch the graph

Point-Slope

$y - 1 = 2(x - 2)$

Point $(2, 1)$ (x, y) $m = \frac{2}{1}$



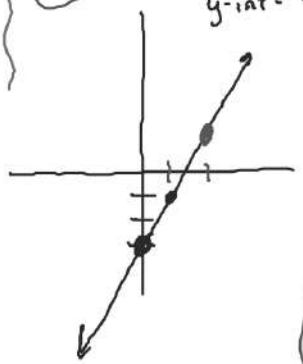
Slope-Int

$y - 1 = 2x - 4$

$+1 \quad +1$

$y = 2x - 3$

y-int: -3



STANDARD FORM

$y = 2x - 3$

$-2x \quad -2x$

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

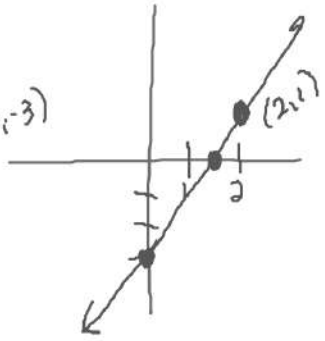
$2x - y = 3$

x-int: $\frac{2x}{2} = \frac{3}{2}$

$x = 1.5 \quad (1.5, 0)$

y-int: $\frac{-y}{-1} = \frac{3}{-1}$

$y = -3 \quad (0, -3)$

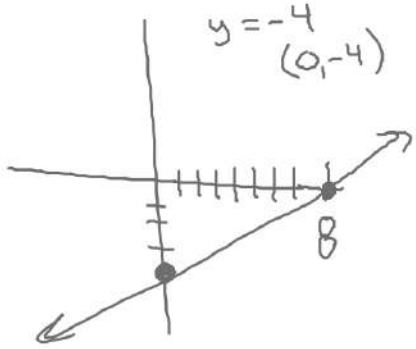


Graph

(3) $2x - 4y = 16$

y-int: $\frac{-4y}{-4} = \frac{16}{-4}$ $y = -4$ $(0, -4)$

x-int: $\frac{2x}{2} = \frac{16}{2}$ $x = 8$ $(8, 0)$



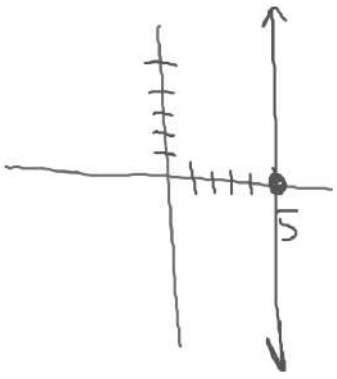
Notes

Graph

① $\frac{5x}{5} = \frac{25}{5}$

$x = 5$

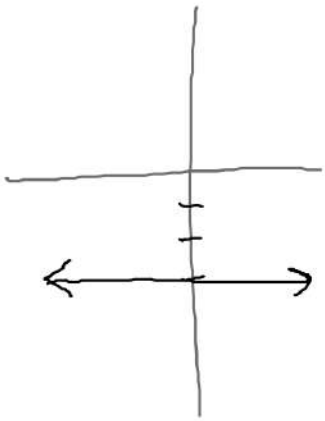
$(5, 0)$



② $\frac{-4y}{-4} = \frac{12}{-4}$

$y = -3$

$(0, -3)$



③ $\frac{7y}{7} = \frac{-22}{7}$

$y = -22/7$

$y = -3.14$