KEY

Math 10C

L36 – 7.2 General Form

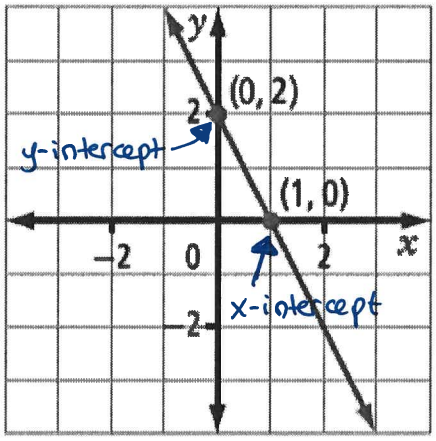
General Form – The equation of a line in the form $x + By + C = 0$, where *A, B,* and *C* are integers, and *A* and *B* are not both zero.

By convention, *A* is a whole number.

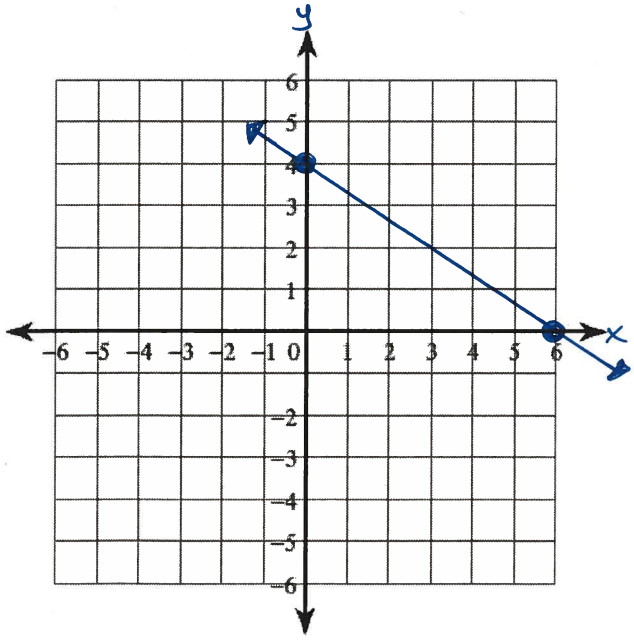
Part 1 – Finding Intercepts to Graph

y – intercept: The x - coordinate of the point where a line or curve crosses the x – axis. The value of x when y=0.

y – intercept: The y - coordinate of the point where a line or curve crosses the y – axis. The value of y when x=0.



Q1: $2x + 3y - 12 = 0$



x-Intercept (Set y=0)

$2x + 3y - 12 = 0$
$2x + 3(0) - 12 = 0$
$2x - 12 = 0$
$+12 \quad +12$
$2x = 12$
$\div 2 \quad \div 2$
$x = 6$

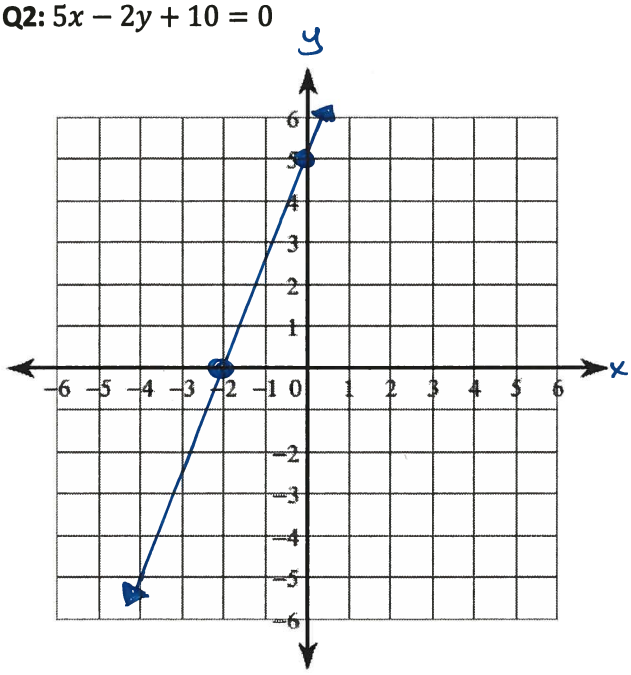
y-Intercept (Set x=0)

$2x + 3y - 12 = 0$
$2(0) + 3y - 12 = 0$
$3y - 12 = 0$
$+12 \quad +12$
$3y = 12$
$\div 3 \quad \div 3$
$y = 4$

KEY

Math 10C

Q2: $5x - 2y + 10 = 0$



x-Intercept (Set y=0)

$5x - 2(0) + 10 = 0$

$5x + 10 = 0$

$-10 \quad -10$

$5x = -10$

$\div 5 \quad \div 5$

$x = -2$

y-Intercept (Set x=0)

$5(0) - 2y + 10 = 0$

$-2y + 10 = 0$

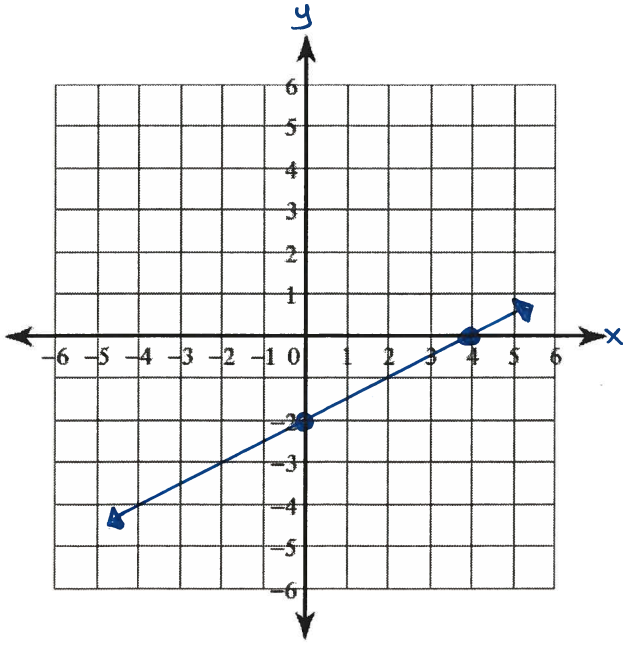
$-10 \quad -10$

$-2y = -10$

$\div(-2) \quad \div(-2)$

$y = 5$

Q3: $2x - 4y - 8 = 0$



x-Intercept (Set y=0)

$2x - 4(0) - 8 = 0$

$2x - 8 = 0$

$+8 \quad +8$

$2x = 8$

$\div 2 \quad \div 2$

$x = 4$

y-Intercept (Set x=0)

$2(0) - 4y - 8 = 0$

$-4y - 8 = 0$

$+8 \quad +8$

$-4y = 8$

$\div(-4) \quad \div(-4)$

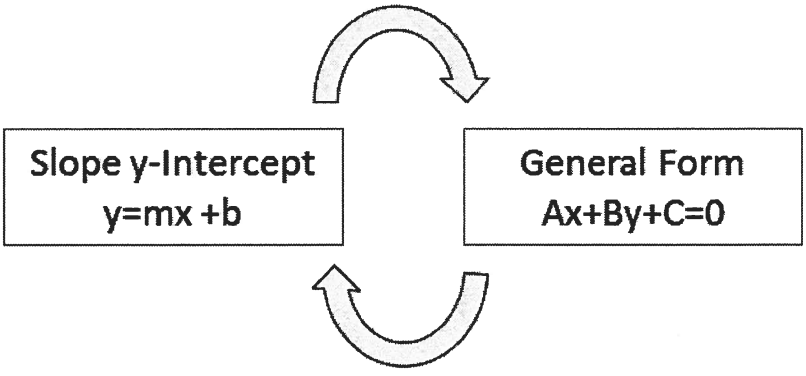
$y = -2$

Math 10C

KEY

Part 2 – Transforming between General Form and Slope y-Intercept Form

1. Bring all variables onto the same side.
2. Make "A" positive.
3. Multiply to remove fractions.



1. Solve for y

Q4: Write the equation $y = 2x - 5$ in General Form.

$-y \quad -y$

$0 = 2x - 1y - 5$

$\boxed{2x - 1y - 5 = 0}$

Q5: Write the equation $y = \frac{2}{3}x + 4$ in General Form.

$-y \quad -y$

$0 = \frac{2}{3}x - 1y + 4$

$\times 3 \quad \times 3 \quad \times 3 \quad \times 3$

$0 = 2x - 3y + 12$

$\boxed{2x - 3y + 12 = 0}$

Q6: Write the equation $4x + 5y + 20 = 0$ in Slope y-Intercept Form.

$-4x \qquad -4x$

$5y + 20 = -4x$

$-20 \qquad -20$

$5y = -4x - 20$

$\div 5 \quad \div 5 \quad \div 5$

$\boxed{y = -\frac{4}{5}x - 4}$ → Slope of $m = -\frac{4}{5}$

→ y-int of $b = -4$

KEY

Math 10C

Part 3 – Graphing Vertical and Horizontal Lines

Q7: Graph the following lines below:

$x = -3$

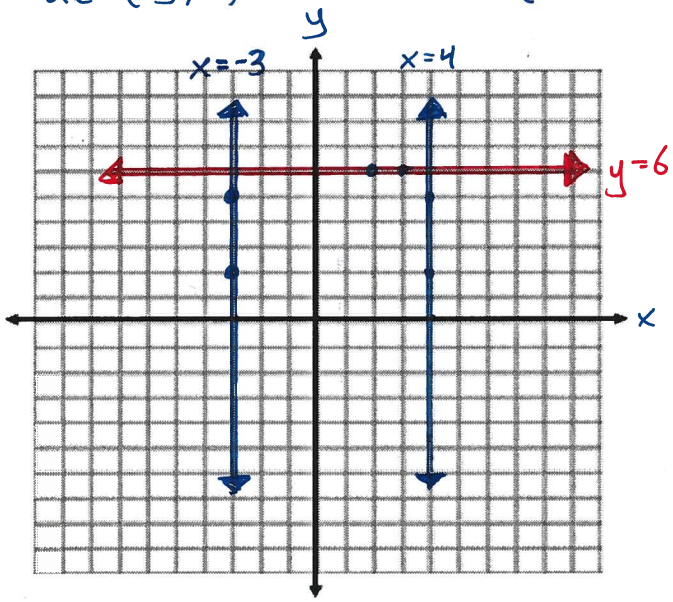
x is always -3
So (-3, 5)
and (-3, 2)

$x = 4$

x is always 4
So (4, 5)
and (4, 2)

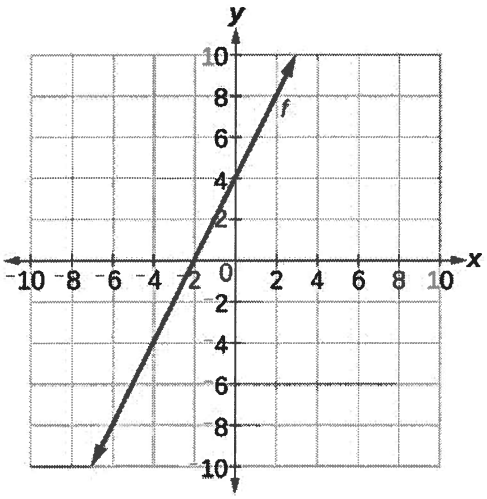
$y = 6$

y is always 6
So (2, 6)
and (3, 6)



Part 4 – Determining the Equation from a Graph

Q8: Write the equation in (a) Slope y-Intercept form and (b) General form.



$m = \frac{4}{2} = 2$

$b = 4$

So $y = mx + b$

is $\boxed{y = 2x + 4}$

$y = 2x + 4$

$-y \quad -y$

$0 = 2x - 1y + 4$

$\boxed{2x - 1y + 4 = 0}$

Part 6 – Textbook Practice

Pg. 365 #1, 2ace, 3aceg, 4, 6