

Standard Form: $Ax + By = C$ (A, B, C are $\neq 0$)

To Convert (Solving for y)

1. move 'x' to right side (undo +/-)
2. Divide both sides by coefficient of y (undo \times)

Name _____

Date _____

Period _____

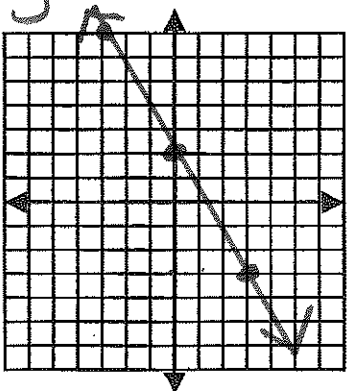
$y = mx + b$

Converting Equations

Convert the following equations from standard form to y-intercept form and then graph.

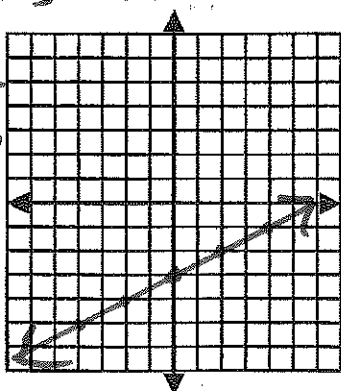
1. $5x + 3y = 6$
 $\begin{array}{r} -5x \\ \hline 3y = -5x + 6 \\ \div 3 \\ y = -\frac{5}{3}x + 2 \end{array}$

$m: -\frac{5}{3}$
 $b: 2$



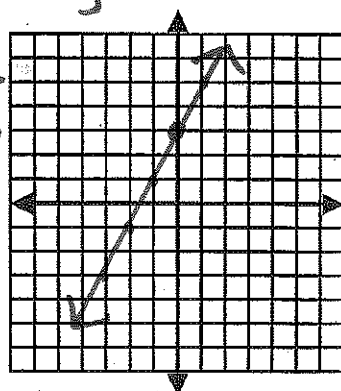
2. $-2x + 4y = -12$
 $\begin{array}{r} +2x \\ \hline 4y = 2x - 12 \\ \div 4 \\ y = \frac{1}{2}x - 3 \end{array}$

$m: \frac{1}{2}$
 $b: -3$



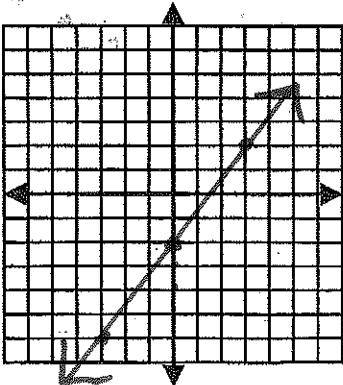
3. $2x - y = -3$
 $\begin{array}{r} -2x \\ \hline -y = -2x - 3 \\ \div -1 \\ y = 2x + 3 \end{array}$

$m: 2$
 $b: 3$



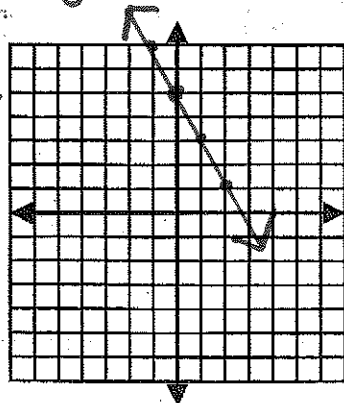
4. $4x - 3y = 6$
 $\begin{array}{r} -4x \\ \hline -3y = -4x + 6 \\ \div -3 \\ y = \frac{4}{3}x - 2 \end{array}$

$m: \frac{4}{3}$
 $b: -2$



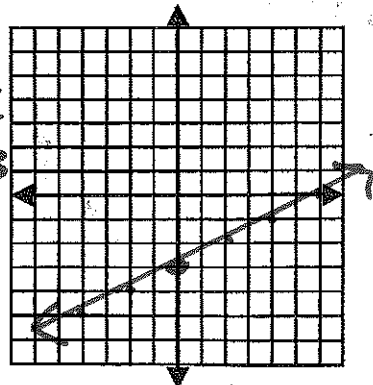
5. $-8x - 4y = -20$
 $\begin{array}{r} +8x \\ \hline -4y = 8x - 20 \\ \div -4 \\ y = -2x + 5 \end{array}$

$m: -2$
 $b: 5$



6. $-6x + 12y = -36$
 $\begin{array}{r} +6x \\ \hline 12y = 6x - 36 \\ \div 12 \\ y = \frac{1}{2}x - 3 \end{array}$

$m: \frac{1}{2}$
 $b: -3$



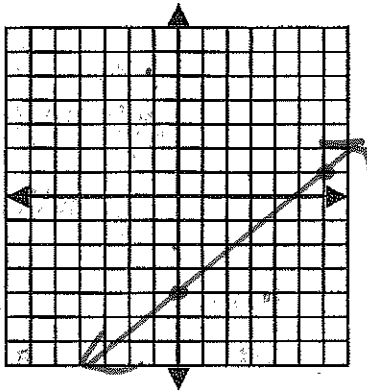
2 methods to convert

1. Algebraic method (undo order of ops)

2. Equation
 $Ax + By = C$ Standard
 $y = -\frac{A}{B}x + \frac{C}{B}$ slope-intercept

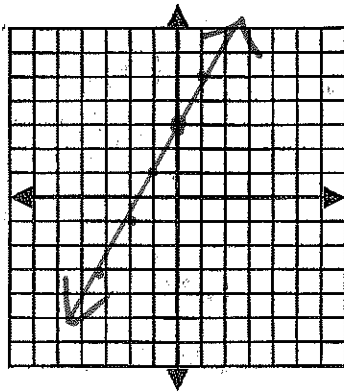
$$7. \begin{array}{r} 5x - 6y = 24 \\ -5x \quad -5x \\ \hline -6y = -5x + 24 \\ \frac{-6y}{-6} = \frac{-5x + 24}{-6} \\ y = \frac{5}{6}x - 4 \end{array}$$

m: $\frac{5}{6}$
b: -4



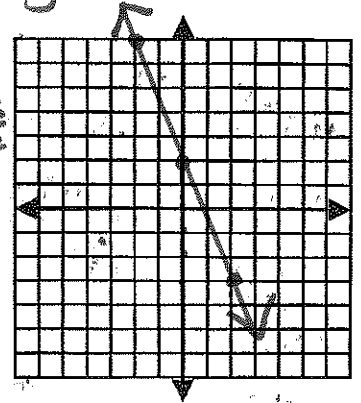
$$8. \begin{array}{r} 2x - 1y = -3 \\ \frac{2x - 1y}{-1} = \frac{-3}{-1} \\ y = \frac{2x + 3}{1} \\ y = 2x + 3 \end{array}$$

m: 2
b: 3



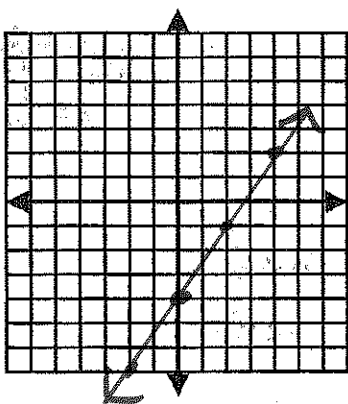
$$9. \begin{array}{r} 20x + 8y = 16 \\ \frac{20x + 8y}{8} = \frac{16}{8} \\ \frac{20x}{8} + y = 2 \\ \frac{5x}{2} + y = 2 \\ y = -\frac{5}{2}x + 2 \end{array}$$

m: $-\frac{5}{2}$
b: 2



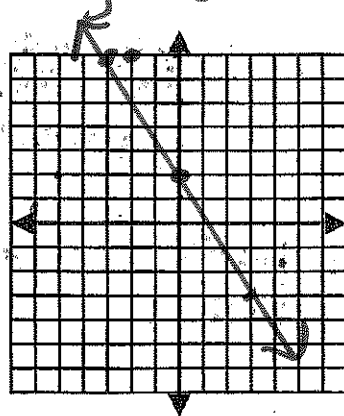
$$10. \begin{array}{r} 3x - 2y = 8 \\ -3x \quad -3x \\ \hline -2y = -3x + 8 \\ \frac{-2y}{-2} = \frac{-3x + 8}{-2} \\ y = \frac{3}{2}x - 4 \end{array}$$

m: $\frac{3}{2}$
b: -4



$$11. \begin{array}{r} -5x - 3y = -6 \\ -5x \quad -5x \\ \hline -3y = -x - 6 \\ \frac{-3y}{-3} = \frac{-x - 6}{-3} \\ y = \frac{1}{3}x + 2 \end{array}$$

m: $\frac{1}{3}$
b: 2



$$12. \begin{array}{r} 2x - 4y = -8 \\ -2x \quad -2x \\ \hline -4y = -2x - 8 \\ \frac{-4y}{-4} = \frac{-2x - 8}{-4} \\ y = \frac{1}{2}x + 2 \end{array}$$

m: $\frac{1}{2}$
b: 2

