Algebra 1
Chapter 5 **Sample** Test

Name *Sample Test*
Date _____ Hour _____

1. Consider the line that passes through the point $(-1, 5)$ and has a slope of -3. $m = -3$ (x_1, y_1)

   a) Write the equation for the line in point-slope form.

$y - y_1 = m(x - x_1)$

$y - 5 = -3(x - -1)$

$\boxed{y - 5 = -3(x + 1)}$

   b) Write the equation for the line in slope-intercept form. $y = mx + b$

$y - 5 = -3x - 3$

$+5 \quad +5$

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

   c) Write the equation for the line in standard form. $Ax + By = C$

$y = -3x + 2$

$+3x \quad +3x$

$\boxed{3x + y = 2}$

2. Write the slope-intercept form of an equation for the line that passes through $(-1, -2)$ and is parallel to $3x + y = -2$. (x, y)

$-3x \quad -3x$

$y = -3x + 2$

So, $m = -3$

Find b

$y = mx + b$

$-2 = (-3)(-1) + b$

$-2 = 3 + b$

$b = -5$, $m = -3$

$y = mx + b$

$\boxed{y = -3x - 5}$

3. Write the slope-intercept form of an equation for the line that passes through $(-3, -2)$ and is perpendicular to $y = -\frac{1}{4}x + 3$ (x, y)

$m = -\frac{1}{4}$

$\boxed{m_\perp = 4}$

Find b

$y = mx + b$

$-2 = (4)(-3) + b$

$-2 = -12 + b$

$b = 10$, $m = 4$

$y = mx + b$

$\boxed{y = 4x + 10}$

4. Write an equation in slope-intercept form for the line that passes through the points $(-2, -1)$ and $(2, 11)$. (x_1, y_1) (x_2, y_2)

$m = \frac{y_2 - y_1}{x_2 - x_1}$

$= \frac{11 - -1}{2 - -2}$

$m = \frac{12}{4} = 3$

Find b w/ $(-2, -1)$

$y = mx + b$

$-1 = (3)(-2) + b$

$-1 = -6 + b$

$b = 5$

$m = 3$, $b = 5$

$y = mx + b$

$\boxed{y = 3x + 5}$

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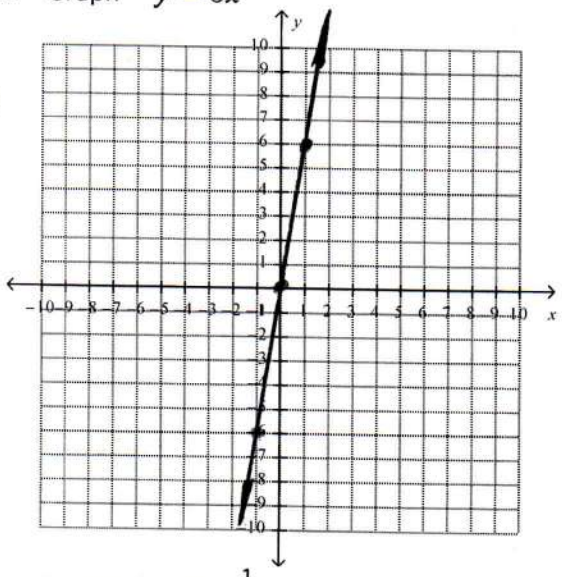
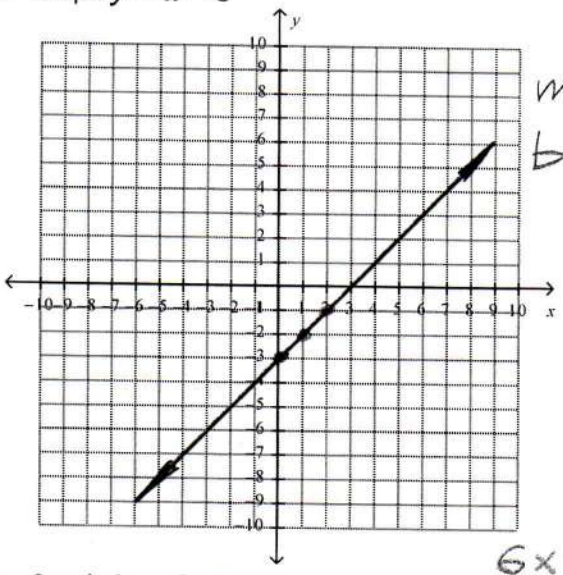
5. Graph $y = 6x$

$m = 6$
$b = 0$



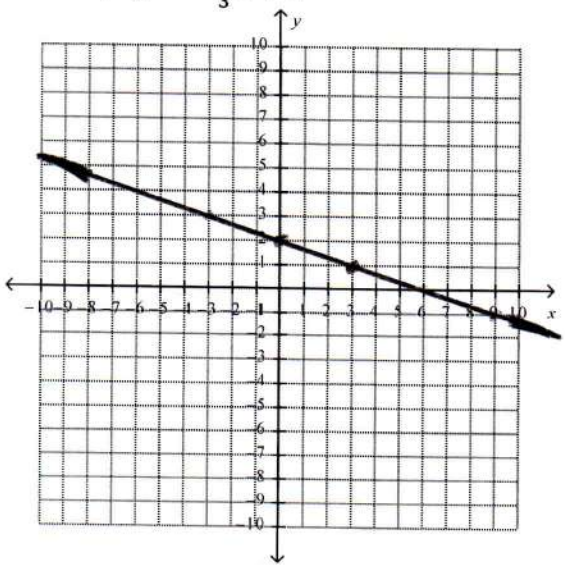
6. Graph $y = x - 3$

$m = 1$
$b = -3$



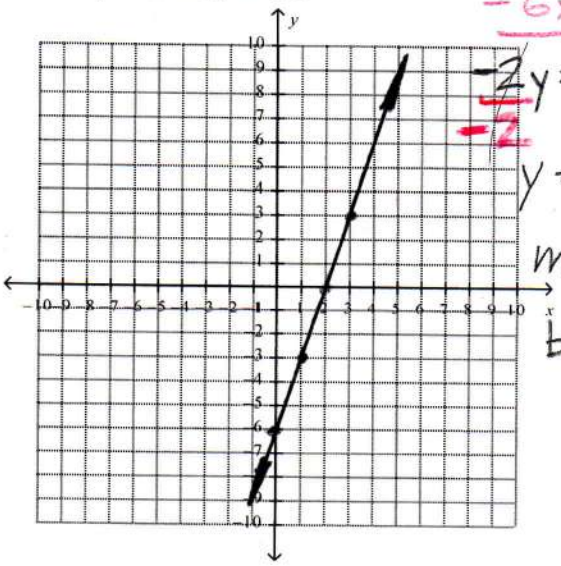
7. Graph $y = -\frac{1}{3}x + 2$

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



8. Graph $6x - 2y = 12$

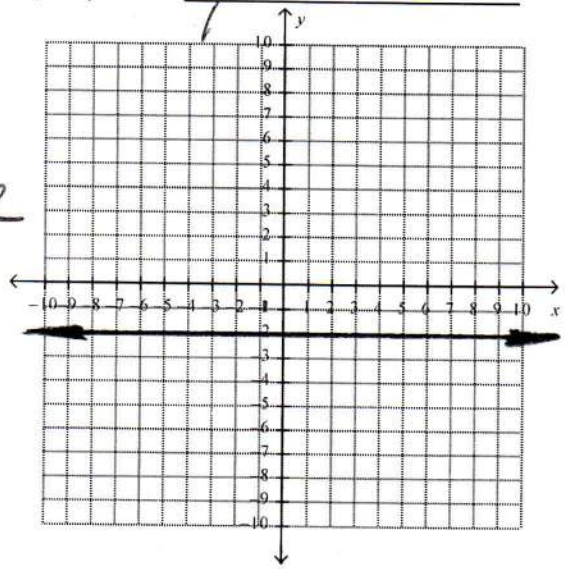
$6x - 2y = 12$
$-6x \quad -6x$
$\frac{-2y}{-2} = \frac{-6x + 12}{-2}$
$y = 3x - 6$
$m = 3$
$b = -6$



9. Write an equation in slope-intercept form for each line graphed below.

a) Equation: $y = -2$

$m = 0$
$b = -2$



b) Equation: $y = -\frac{1}{2}x - 3$

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