

Name Key

Your score 29 Percent _____

Slope Pre-test
Math 7+

Possible points 29 Grade _____

Show work on ALL problems

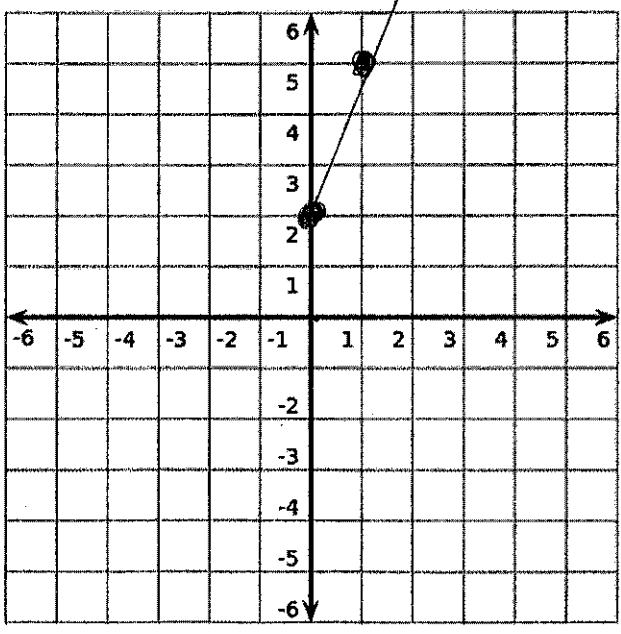
1) Complete the table of values. Then graph the equation.

$y = 3x + 2$

1pt

x	$y = 3x + 2$	y	(x, y)
0	$y = 3 \cdot 0 + 2$	2	(0, 2)
1	$3 \cdot 1 + 2$	5	(1, 5)
2	$3 \cdot 2 + 2$	8	(2, 8)
3	$3 \cdot 3 + 2$	11	(3, 11)

1pt



1pt

What is the formula for this linear equation?

$y = mx + b$

Determine if each given pair is a solution of the equation $-2x + 3y = 6$. Write YES or NO.

<p>2) (0, -6)</p> $-2 \cdot 0 + 3(-6) = 6$ $0 + -18 \stackrel{?}{=} 6$ $\boxed{-18 \neq 6}$ <p>(1pt) (NO)</p>	<p>3) (6, 2)</p> $-2 \cdot 6 + 3 \cdot 2 \stackrel{?}{=} 6$ $-12 + 6 \stackrel{?}{=} 6$ $-6 \neq 6$ <p>(1pt) (NO)</p>
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Determine the solution to the equation $-x + 4y = 5$ for the given values of x. Show the solution as an ordered pair!

<p>4) $x = 0$</p> $0 + 4y = 5$ $\frac{4y}{4} = \frac{5}{4}$ $y = \frac{5}{4}$ <p>(1pt) $(0, \frac{5}{4})$</p>	<p>5) $x = -1$</p> $-(-1) + 4y = 5$ $1 + 4y = 5$ $\frac{4y}{4} = \frac{4}{4}$ $y = 1$ <p>(1pt) $(-1, 1)$</p>
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Find the slope of the line passing through each pair of points:

<p>6) (2, 5) and (8, 1)</p> <p>(1pt)</p>	$y = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$ $\frac{1 - 5}{8 - 2} = \frac{-4}{6} = \boxed{-\frac{2}{3}}$
<p>7) (-2, -2) and (-1, 0)</p> <p>(1pt)</p>	$y = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$ $\frac{0 - (-2)}{-1 - (-2)} = \frac{0 + 2}{-1 + 2} = \boxed{\frac{2}{1}} \text{ slope}$

9 and 10

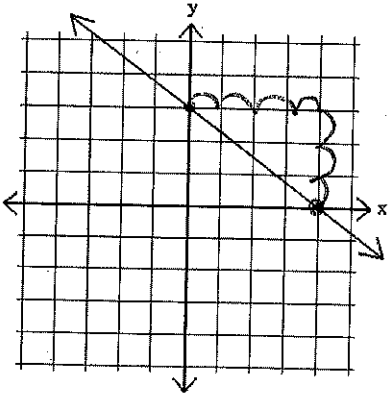
if $m = m$ parallel

if $m = -\frac{1}{m}$ perp

8) Use the graph of the line to determine the slope:

$$\uparrow \frac{3}{\downarrow -4} = \frac{+3}{-4}$$

Negative Slope



1pt

Tell whether the lines passing through the given points are parallel or perpendicular.

9) Line 1: (-2, 1) and (2, -1)
Line 2: (0, 0) and (-1, -2)

$$m = \frac{\Delta y}{\Delta x} = \frac{-1-1}{2-(-2)} = \frac{-2}{4} = -\frac{1}{2}$$

$$m = \frac{\Delta y}{\Delta x} = \frac{-2-0}{-1-0} = \frac{-2}{-1} = 2$$

10) Line 1: (-3, 1) and (-2, 3)
Line 2: (2, 1) and (0, -3)

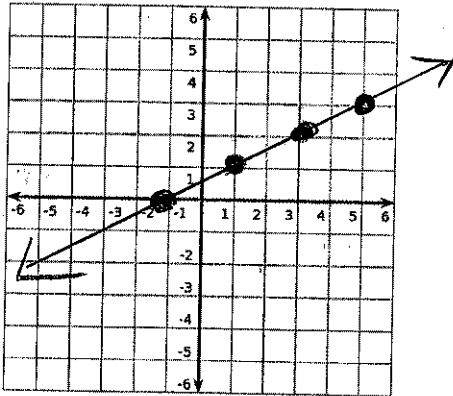
$$\frac{\Delta y}{\Delta x} = \frac{3-1}{-2-(-3)} = \frac{2}{1} = 2$$

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

neither

up
right

11) Graph the line passing through (1, 1) with a slope of $\frac{1}{2}$.



1pt

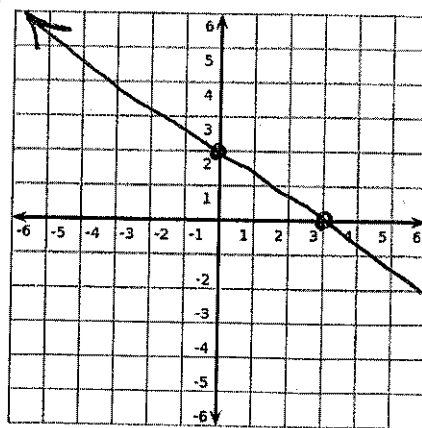
12) Find the x-intercept and y-intercept of the line $2x + 3y = 6$. Then graph the line.

x-intercept: (3, 0) Let $x=0$

y-intercept: (0, 2) Let $y=0$

$$x=0 \\ 2 \times 0 + 3y = 6 \\ 3y = 6 \\ \frac{3y}{3} = \frac{6}{3} \\ y = 2$$

$$y=0 \\ 2x + 3 \cdot 0 = 6 \\ 2x = 6 \\ \frac{2x}{2} = \frac{6}{2} \\ x = 3$$



$$2x + 3y = 6 \\ \underline{-2x} \quad \underline{-3y} \\ \hline -3y = 6 \\ y = -2$$

1pt

13) Write the equation in slope-intercept form and then find the slope and y-intercept.

$2x + 5y = 8$ (1pt)

Slope-intercept form:

$y = -\frac{2}{5}x + \frac{8}{5}$

Slope:

$-\frac{2}{5}$ (1pt)

y-intercept:

$\frac{8}{5}$ (1pt)

$y = mx + b$
 $2x + 5y = 8$
 $\underline{-2x} \quad \underline{-2x}$

$\frac{5y}{5} = \frac{-2x + 8}{5}$

$y = -\frac{2}{5}x + \frac{8}{5}$

14) Write the equation of the line that passes through each pair of points in slope-intercept form.

(-3, 1) and (2, -1) (1pt)

$y = -\frac{2}{5}x + \frac{1}{5}$ (1pt)

(1) $m = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-1 - 1}{2 - (-3)} = \frac{-2}{5}$

$\frac{-2}{5}$

$-1 = -\frac{4}{5} + \frac{4}{5} + \frac{1}{5} = b$

(2) Find b:

$y = mx + b \rightarrow -1 = -\frac{2}{5}(2) + b$

$-1 = -\frac{2}{5}(2) + b$

$-\frac{1}{5} = b$

15) Write the point-slope form of the equation with the given slope that passes through the indicated point.

The line with slope -2 passing through (4, 1)

$y - 1 = -2(x - 4)$ Answer

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

$y - 1 = -2(x - 4)$

$y - 1 = -2x + 8$

$y = -2x + 9$ slope-intercept

16) Tell whether the two lines are parallel, perpendicular or neither. Explain your reasoning by expressing each equation in $y = mx + b$ form.

$7x + 2y = 14$

$7x + 2y = +14$
 $\underline{-7x} \quad \underline{-7x}$

$\frac{7y}{7} = \frac{2x - 5}{7}$

$\frac{2y}{2} = \frac{-7x + 14}{2}$

$y = \frac{2}{7}x - \frac{5}{7}$

$y = -\frac{7}{2}x + 7$

If m are equal = parallel

If $m \rightarrow \frac{1}{m}$ perpendicular

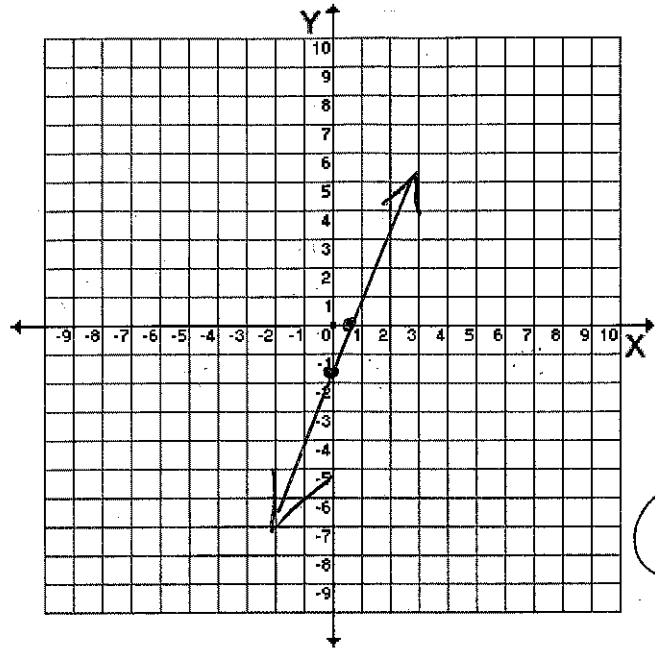
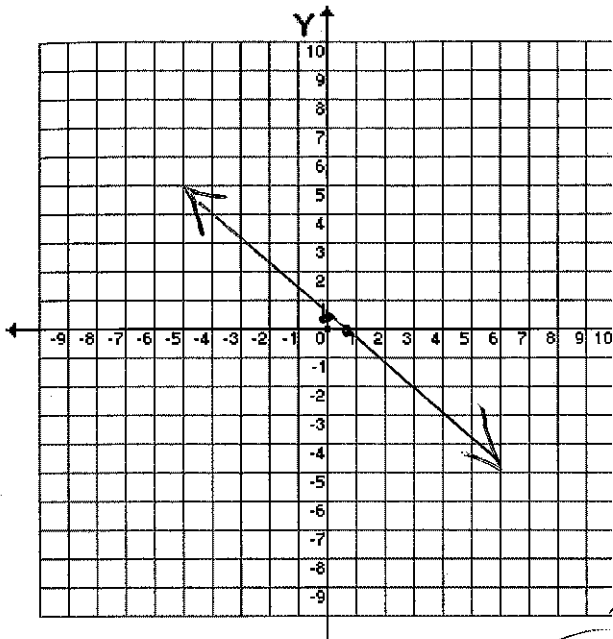
(1pt) b/c slopes are negative reciprocals of each other

(1pt)

Graph each equation on the coordinate plane.

17) $\frac{-6y}{-6} = \frac{3x-2}{-6}$

18) $5x - 2y = 3$



1 pt

1 pt

$y = \frac{3}{-6}x + \frac{2}{6}$

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

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$(0, \frac{1}{3})$

When $x=0$ $y = \frac{1}{3}$

when $y=0$

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

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

$+\frac{2}{3} = x$ $(\frac{2}{3}, 0)$

$5x - 2y = 3$
 $-5x$ $-5x$

$-\frac{2y}{-2} = \frac{-5x+3}{-2}$

$y = \frac{5}{2}x + \frac{-3}{2}$

When $x=0$ $(0, \frac{3}{2})$

$y = -\frac{3}{2}$

when $x=0$

$\frac{5x}{5} = \frac{3}{5}$ $(\frac{3}{5}, 0)$
 $v = \frac{3}{5}$