Name KEY Class _____ Date _____

Practice 8-3

Slope and *y*-intercept

$\frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$

Find the slope of the line through each pair of points.

1. $A(1, 1), B(6, 3)$

$\frac{3-1}{6-1} = \frac{2}{5}$ ↑2 →5 or ↓2 ←5

2. $J(-4, 6), K(-4, 2)$ x's same

$\frac{2-6}{-4-(-4)} = \frac{-4}{0} =$ undef → vert. $x = -4$

3. $P(3, -7), Q(-1, -7)$ y's same

$\frac{-7-(-7)}{-1-3} = \frac{0}{-4} = 0$ → horiz $y = -7$

4. $M(7, 2), N(-1, 3)$

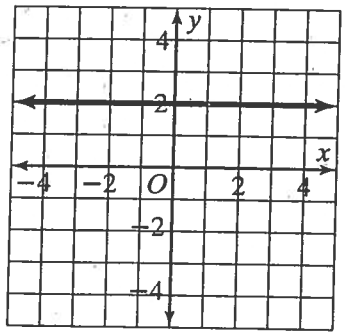
$\frac{3-2}{-1-7} = \frac{1}{-8} = -\frac{1}{8}$ ↑1 ←8 or ↓1 →8

Complete the table.

	Equation	Equation in Slope-Intercept Form	Slope	*y*-intercept
5.	$5x - y = 6$	$-y = -5x + 6$; $y = 5x - 6$	$\frac{5}{1}$ ↑5 →1 or ↓5 ←1	$b = -6$ $(0, -6)$
6.	$7x + 2y = 10$	$2y = -7x + 10$; $y = -\frac{7}{2}x + 5$	$-\frac{7}{2}$ ↓7 →2 or ↑7 ←2	$b = 5$ $(0, 5)$

Find the slope of each line.

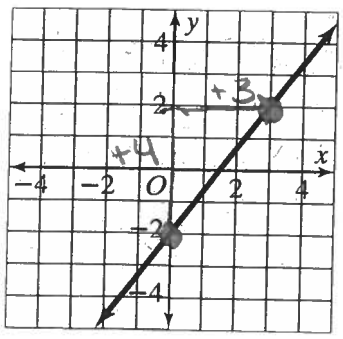
7. zero



all y's same

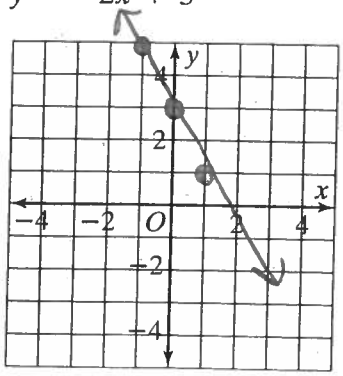
$\frac{\Delta y}{\Delta x} = \frac{0}{\#} = 0$

8. $\frac{4}{3}$



Graph each equation.

9. $y = -2x + 3$ neg. → down

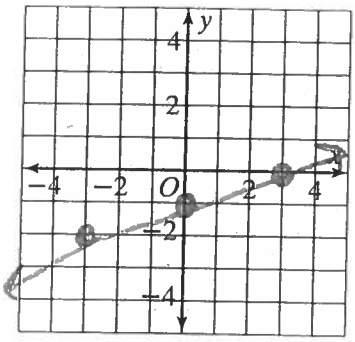


① $b = 3$ $(0, 3)$

② $m = -2$

$\frac{-2}{1}$ ↓2 →1 or $\frac{2}{-1}$ ↑2 ←1

10. $y = \frac{1}{3}x - 1$ pos. → up



① $b = -1$ $(0, -1)$

② $m = \frac{1}{3}$ ↑1 →3 or ↓1 ←3

Solve for y. Then graph the equation using the slope and y-intercept.

11. $-3x+15y=0$

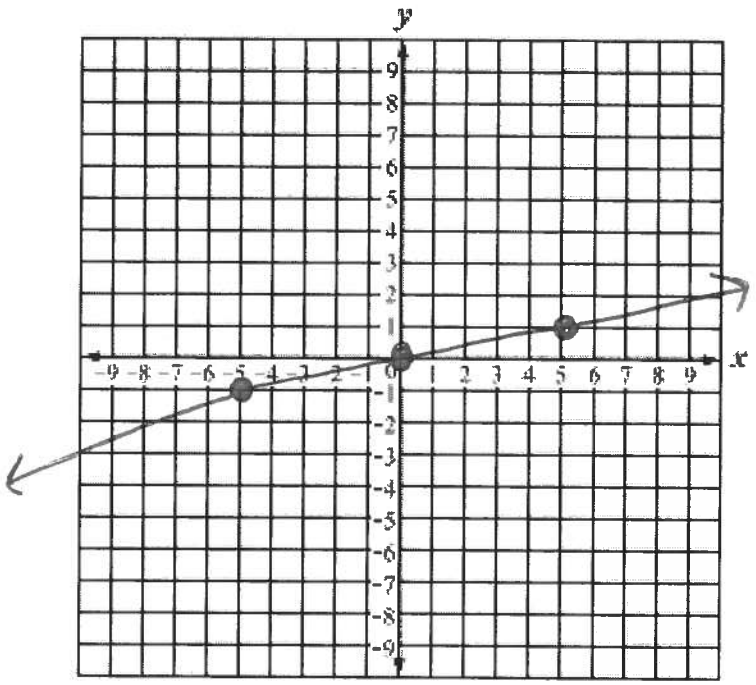
$15y=3x$

$y=\frac{3}{15}x$

$y=\frac{1}{5}x$

$b=0 \rightarrow (0,0)$

$m=\frac{1}{5}$ ↑1 →5 or ↓1 ←5



12. $4x-2y=-2y+20$

$4x=20$

$x=5$

all x's same

y-int? none

slope → undef.

$\frac{\Delta y}{\Delta x}=\frac{\#}{0}$