Name _____ Date _____ Class _____

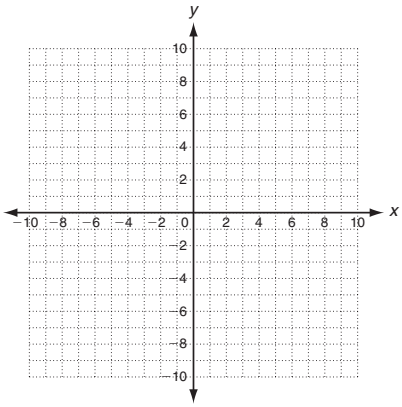
LESSON 5-6

Practice C

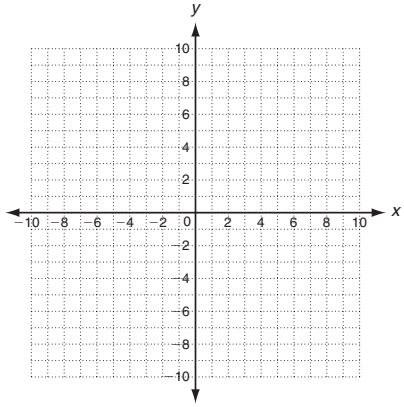
Point-Slope Form

Graph the line with the given slope that contains the given point.

1. slope $= -2$; $(1, 3)$



2. slope $= 0$; $(-4, -2)$



Write an equation in point-slope form for the line with the given slope that contains the given point.

3. slope $= \frac{4}{3}$; $(-5, -3)$

_____

4. slope $= -3$; $(0, 8)$

_____

Write an equation in slope-intercept form for the line with the given slope that contains the given point.

5. slope $= -4$; $(2, -1)$

_____

6. slope $= \frac{1}{4}$; $(-2, 3)$

_____

Write an equation in slope-intercept form for the line through the two points.

7. $(-3, 6)$; $(2, 1)$

_____

8. $(0, -5)$; $(6, -3)$

_____

9. A pool is being drained at a constant rate. The amount of water is a function of the number of minutes the pool has been draining, as shown in the table. Write an equation in slope-intercept form that represents the function. Then find the amount of water in the pool after two and a half hours.

Time (min)	12	20	50
Volume (gal)	4962	4754	3974

_____

LESSON 5-6

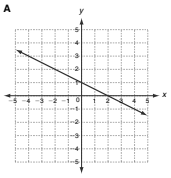
Practice A

Point-Slope Form

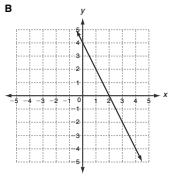
Match each graph with the correct slope and point.

1. slope $= \frac{1}{2}$; (0, 2) C **2.** slope $= -\frac{1}{2}$; (2, 0) A **3.** slope $= -2$; (2, 0) B

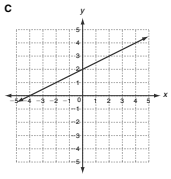
A



B



C



Write an equation in point-slope form for the line with the given slope that contains the given point.

4. slope $= 4$; (3, 8) $y - 8 = 4(x - 3)$

5. slope $= -\frac{1}{2}$; (5, −3) $y + 3 = -\frac{1}{2}(x - 5)$

Write an equation in slope-intercept form for the line with the given slope that contains the given point.

6. slope $= 5$; (1, 7) $y = 5x + 2$

7. slope $= -3$; (4, 0) $y = -3x + 12$

Find the slope of the line that contains the given points. Then write an equation in slope-intercept form for the line.

8. (0, 2); (2, 6) 2; $y = 2x + 2$

9. (8, −2); (4, −4) $\frac{1}{2}$; $y = \frac{1}{2}x - 6$

10. The cost to have T-shirts made with the school logo is a function of the number of T-shirts ordered. The costs for 20, 50, and 100 shirts are shown. Write an equation in slope-intercept form that represents the function. Then find the cost of ordering 130 T-shirts.

$y = 8x + 30$; \$1070

T-shirts	20	50	100
Cost ($)	190	430	830

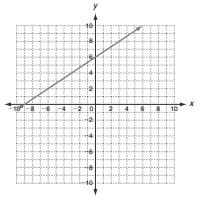
LESSON 5-6

Practice B

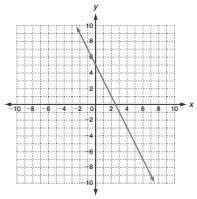
Point-Slope Form

Graph the line with the given slope that contains the given point.

1. slope $= \frac{2}{3}$; (−3, 4)



2. slope $= -2$; (0, 5)



Write an equation in point-slope form for the line with the given slope that contains the given point.

3. slope $= 3$; (−4, 2) $y - 2 = 3(x + 4)$

4. slope $= -1$; (6, −1) $y + 1 = -(x - 6)$

Write an equation in slope-intercept form for the line with the given slope that contains the given point.

5. slope $= -4$; (1, −3) $y = -4x + 1$

6. slope $= \frac{1}{2}$; (−8, −5) $y = \frac{1}{2}x - 1$

Write an equation in slope-intercept form for the line through the two points.

7. (2, 1); (0, −7) $y = 4x - 7$

8. (−6, −6); (2, −2) $y = \frac{1}{2}x - 3$

9. The cost of internet access at a cafe is a function of time. The costs for 8, 25, and 40 minutes are shown. Write an equation in slope-intercept form that represents the function. Then find the cost of surfing the web at the cafe for one hour.

$y = 0.17x + 3$; \$13.20

Time (min)	8	25	40
Cost ($)	4.36	7.25	9.80

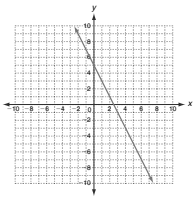
LESSON 5-6

Practice C

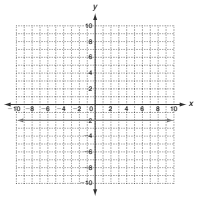
Point-Slope Form

Graph the line with the given slope that contains the given point.

1. slope $= -2$; (1, 3)



2. slope $= 0$; (−4, −2)



Write an equation in point-slope form for the line with the given slope that contains the given point.

3. slope $= \frac{4}{3}$; (−5, −3) $y + 3 = \frac{4}{3}(x + 5)$

4. slope $= -3$; (0, 8) $y - 8 = -3(x - 0)$

Write an equation in slope-intercept form for the line with the given slope that contains the given point.

5. slope $= -4$; (2, −1) $y = -4x + 7$

6. slope $= \frac{1}{4}$; (−2, 3) $y = \frac{1}{4}x + \frac{7}{2}$

Write an equation in slope-intercept form for the line through the two points.

7. (−3, 6); (2, 1) $y = -x + 3$

8. (0, −5); (6, −3) $y = \frac{1}{3}x - 5$

9. A pool is being drained at a constant rate. The amount of water is a function of the number of minutes the pool has been draining, as shown in the table. Write an equation in slope-intercept form that represents the function. Then find the amount of water in the pool after two and a half hours.

$y = -26x + 5274$; 1374 gal

Time (min)	12	20	50
Volume (gal)	4962	4754	3974

LESSON 5-6

Review for Mastery

Point-Slope Form

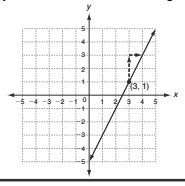
You can graph a line if you know the slope and any point on the line.

Graph the line with slope 2 that contains the point (3, 1).

Step 1: Plot (3, 1).

Step 2: The slope is 2 or $\frac{2}{1}$. Count 2 **up** and **1 right** and plot another point.

Step 3: Draw a line connecting the points.



Write an equation in point-slope form for the line with slope $-\frac{1}{3}$ that contains the point (5, 2).

The **point-slope form** of a linear equation is $y - y_1 = m(x - x_1)$.

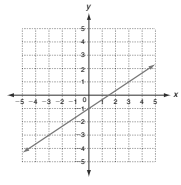
m is the given slope. (x_1, y_1) is the given point.

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

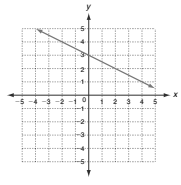
$y - 2 = -\frac{1}{3}(x - 5)$ *Substitute* $-\frac{1}{3}$ *for m, 5 for* x_1 *and 2 for* y_1.

Graph the line with the given slope that contains the given point.

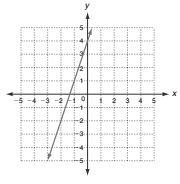
1. slope $= \frac{2}{3}$; (−3, −3)



2. slope $= \frac{-1}{2}$; (−2, 4)



3. slope $= 3$; (−2, −2)



Write an equation in point-slope form for the line with the given slope that contains the given point.

4. slope $= -\frac{2}{5}$; (5, 1) $y - 1 = -\frac{2}{5}(x - 5)$

5. slope $= 5$; (−2, 6) $y - 6 = 5(x + 2)$

6. slope $= \frac{1}{6}$; (−4, 0) $y - 0 = \frac{1}{6}(x + 4)$