Name: Date:

Point Slope Form Mixed Practice

Write an equation of the line in point-slope form: $y - y_1 = m(x - x_1)$.

A. Use the given slope and point.

1. slope $= 3$, point $(-2, 5)$

4. slope $= -6$, point $(1, 0)$

2. slope $= -\frac{1}{4}$, point $(8, -3)$

5. slope $= \frac{7}{3}$, point $(-6, -2)$

3. slope $= \frac{2}{5}$, point $(0, 7)$

6. slope $= -2$, point $(4, 9)$

B. First find the slope $m = \frac{y_2 - y_1}{x_2 - x_1}$, **then write the equation using either point.**

7. $(2, -1)$ and $(8, 5)$

9. $(-4, -2)$ and $(2, 10)$

8. $(-3, 4)$ and $(5, 0)$

10. $(7, 1)$ and $(1, -5)$

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A. Use the given slope and point.

1.   slope $= 3$, point $(-2, 5)$

$$y - 5 = 3(x + 2)$$

2.   slope $= -\frac{1}{4}$, point $(8, -3)$

$$y + 3 = -\frac{1}{4}(x - 8)$$

3.   slope $= \frac{2}{5}$, point $(0, 7)$

$$y - 7 = \frac{2}{5}(x - 0) \ \ or$$
$$y - 7 = \frac{2}{5}x$$

4.   slope $= -6$, point $(1, 0)$

$$y - 0 = -6(x - 1) \ or$$
$$y = -6(x - 1)$$

5.   slope $= \frac{7}{3}$, point $(-6, -2)$

$$y + 2 = \frac{7}{3}(x + 6)$$

6.   slope $= -2$, point $(4, 9)$

$$y - 9 = -2(x - 4)$$

B. First find the slope $m = \frac{y_2 - y_1}{x_2 - x_1}$, **then write the equation using either point.**

7. $(2, -1)$ and $(8, 5)$

Option 1: $y + 1 = 1(x - 2)$
Option 2: $y - 5 = 1(x - 8)$

8. $(-3, 4)$ and $(5, 0)$

Option 1: $y - 4 = -\frac{1}{2}(x + 3)$
Option 2: $y - 0 = -\frac{1}{2}(x - 5)$ or
$y = -\frac{1}{2}(x - 5)$

9. $(-4, -2)$ and $(2, 10)$

Option 1: $y + 2 = 2(x + 4)$
Option 2: $y - 10 = 2(x - 2)$

10. $(7, 1)$ and $(1, -5)$

Option 1: $y - 1 = 1(x - 7)$
Option 2: $y + 5 = 1(x - 1)$