

EXTRA PRACTICE 18**Writing Equations Of Lines Using The Point-Slope Form****Use after Section 7.2****Name** _____

Examples:

- a) Find a point-slope equation for the line with slope $\frac{1}{3}$ that contains $(4,5)$.

We use the point-slope equation. $[y - y_1 = m(x - x_1)]$

Solution: $y - 5 = \frac{1}{3}(x - 4)$

- b) Find a slope-intercept equation for the line with slope 2 that contains $(3,-1)$.

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

First, write an equation in
point-slope form.

$$y - (-1) = 2(x - 3)$$

$$y + 1 = 2x - 6$$

Then find an equivalent equation of the form
 $y = mx + b$.

$$y = 2x - 7$$

This is the slope-intercept form.

- c) Find an equation of a line that contains the points $(5,-2)$ and $(-2,1)$.

$$m = \frac{1 - (-2)}{-2 - 5} = \frac{3}{-7} = -\frac{3}{7}$$

First find the slope.

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

Use the point-slope form using either $(5,-2)$

$$y - (-2) = -\frac{3}{7}(x - 5)$$

or $(-2,1)$ as (x_1, y_1) .

$$y + 2 = -\frac{3}{7}x + \frac{15}{7}$$

If you want slope-intercept form, carry out the

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

work to get $y = mx + b$.

Find a point-slope equation for a line containing the given point and having the given slope.

1. $(4,-3)$, $m = -1$ _____

2. $(-5,-6)$, $m = 2$ _____

3. $(-7,2)$, $m = 3$ _____

4. $(3,5)$, $m = -2$ _____

Find a slope-intercept equation for a line containing the given point and having the given slope.

5. $(6,-2)$, $m = -3$ _____

6. $(5,-2)$, $m = 2$ _____

7. $(7,0)$, $m = 4$ _____

8. $(0,9)$, $m = -2$ _____

9. $(5,-1)$, $m = \frac{1}{5}$ _____

10. $(-3,-2)$, $m = \frac{1}{4}$ _____

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Find a slope-intercept equation for a line that contains the given pair of points. (Hint: First find the slope, then use point-slope form.)

11. $(1,5)$ and $(4,2)$ _____

12. $(-4,2)$ and $(1,-3)$ _____

13. $(-5,-3)$ and $(1,-1)$ _____

14. $(0,3)$ and $(-2,6)$ _____

15. $(-8,3)$ and $(-4,1)$ _____

16. $(6,2)$ and $(-3,0)$ _____

17. $(1,3)$ and $(4,6)$ _____

18. $(3,-4)$ and $(-3,4)$ _____

19. $(-7,4)$ and $(-4,7)$ _____

20. $(9,-5)$ and $(7,7)$ _____