

3.12

Writing the Equation of a Line Given the Slope and the y -Intercept

• Example 1

(a) Write the equation of a line with slope 3 and y -intercept 5.

Using the slope-intercept form, we have

$$y = 3x + 5$$

which is the desired equation.

(b) Write the equation of a line with slope $-\frac{3}{4}$ and y -intercept -3 .

We obtain

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

or

$$y = -\frac{3}{4}x - 3$$

• • • CHECK YOURSELF 1

Write the equation of a line with the following:

- a. slope -2 and y -intercept 7 b. slope $\frac{2}{3}$ and y -intercept -3
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• • • CHECK YOURSELF ANSWER

1. (a) $y = -2x + 7$; (b) $y = \frac{2}{3}x - 3$.
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3.12 Exercises

Name _____

Section _____

Date _____

A N S W E R S

1. _____

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Write the equation of the line with slope m and y -intercept b .

1. $m = 3, b = 5$

2. $m = -2, b = 4$

3. $m = -3, b = 4$

4. $m = 5, b = -2$

5. $m = \frac{1}{2}, b = -2$

6. $m = -\frac{3}{4}, b = 8$

7. $m = -\frac{2}{3}, b = 0$

8. $m = \frac{2}{3}, b = -2$

9. $m = \frac{3}{4}, b = 3$

10. $m = -3, b = 0$

11. $m = 2, b = 3$

12. $m = \frac{3}{4}, b = -2$

13. $m = -\frac{2}{3}, b = 2$

14. $m = -3, b = 6$

15. $m = \frac{2}{5}, b = -3$