NAME _____ DATE _____

Module 8 Writing Linear Equations of Two Variables
Lesson 4 Solving Linear Equations in Two Variables When Parameters Are Changed

Given each equation, determine the resulting equation when the parameters are changed as indicated. Write the new equation in slope-intercept form.

1. $y = \frac{1}{3}x - 3$
increase slope by 1

2. $y = -\frac{5}{2}x + 6$
decrease *y*-intercept by 4

3. $y = -2x + 1$
increase *y*-intercept by 3

4. $y = x - 3$
decrease slope by $\frac{2}{3}$

5. $y = -\frac{3}{4}x + 2$
decrease *y*-intercept by 2

6. $y = \frac{2}{3}x - \frac{1}{4}$
multiply slope by 2

7. $y = -x + \frac{5}{4}$
increase slope by –6

8. $y = -\frac{1}{4}x - 5$
decrease *y*-intercept by $\frac{1}{2}$

9. $y = \frac{6}{5}x + \frac{1}{5}$
decrease *y*-intercept by $\frac{2}{5}$

10. $y = -\frac{4}{3}x - 3$
increase slope by $\frac{5}{3}$

11. $y = \frac{7}{3}x - 1$
increase slope by 2

12. $y = -3x - 8$
multiply slope by $\frac{1}{4}$

13. $y = -\frac{6}{7}x - 2$
decrease *y*-intercept by 2

14. $y = -\frac{2}{7}x + 9$
decrease *y*-intercept by 5

15. $y = x + \frac{2}{5}$
decrease slope by 2

16. $y = -\frac{5}{2}x - 1$
multiply the slope by $\frac{3}{2}$

In slope-intercept form, write the equation of the line described:

17. The line with the same *y*-intercept and the opposite slope as the line $3x - y = 5$.

18. The line with the same slope and the opposite *y*-intercept as the line $4y - 2x = 8$.

19. The line with the same slope and the opposite *y*-intercept as the line $5y + 3x = 2$.

20. The line with the same *y*-intercept and the opposite slope as the line $9x - 2y + 4 = 7$.

Journal

1. Compare the graphs of two lines that have the same slope but opposite *y*-intercepts.
2. Explain how the graph of an equation with a negative value for the *b* parameter differs from the graph of an equation with a positive value for the *b* parameter.
3. Explain how a line with a negative slope differs from a line with a positive slope.
4. Explain how increasing the *b* parameter by 4 changes the graph of an equation.
5. Explain how decreasing a negative slope by 10 affects a line.

Cumulative Review

Identify the Property of Equality illustrated.

1. $5x + 2 = 5x + 2$

2. If $3y = 4x$, then $4x = 3y$

3. If $x = y$ and $y = z$, then $x = z$

4. If $8x = 10y$, then $\frac{8}{2}x = \frac{10}{2}y$

5. If $3x = 4y + 1$, then $6(3x) = 6(4y + 1)$

6. If $x + 4 = y$, then $x = y - 4$

7. If $y - 2 = x$, then $y = x + 2$

8. $4(2a + 3b) = 8a + 12b$

9. If $4x = 8y$ and $2y = x$, then $4x + 2y = 8y + x$

10. $(3m + 2n) + 4p = 3m + (2n + 4p)$