NAME _____ DATE _____

Module 8 Writing Linear Equations of Two Variables

Lesson 4 Solving Linear Equations in Two Variables When Parameters Are Changed

guided notes

Lesson Objectives

- Transform an equation into slope-intercept form when it is given in standard form.
- Graph an equation given in standard form.
- Identify the effects of parameter changes on the appearance of graphs.

The _____ in the equation $y = mx + b$ are _____ and _____.

Changing the parameter b moves a line up or down the _____ without changing its slope.

Changing the value of the parameter m affects the _____ and _____ of a line.

Changing the parameter m to its opposite reciprocal creates a line perpendicular to the original line with the same y-intercept.

For problems 1-3, graph the equations on a coordinate plane. Use a separate sheet of grid paper.

1. Given $y = -\frac{1}{4}x - 2$, determine the resulting equation when the y-intercept is increased by six. Compare the graphs.

_____

_____

2. Given $y = -\frac{1}{4}x - 2$, determine the resulting equation when the slope is multiplied by –16. Compare the graphs.

_____

_____

3 Given $y = 3x - 4$, determine the resulting equation when the slope is divided by –6. Compare the graphs.

_____

_____

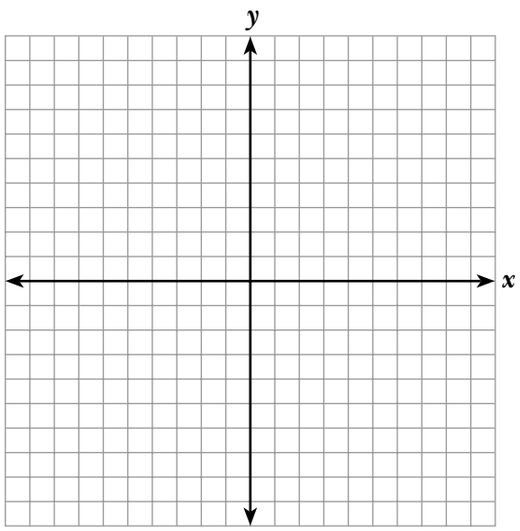
Slope-intercept form, point-slope form, and _____ are three forms a linear equation can take.

Standard form of a linear equation is _____, where _____ and _____ cannot both be _____.

Slope-intercept form of a linear equation is _____.

To convert a linear equation from standard form to slope-intercept form, solve it for _____, and write in the form _____.

4 Graph the line $3x - y = 6$. Find an equation of the line whose slope is one-third the slope of the given line and whose *y*-intercept is four more than the *y*-intercept of the given line. Graph the new line and compare the graphs.



Linear Equations

- _____ Form: $y = mx + b$
- Point-Slope Form: _____
- Standard Form: $Ax + By = C$, where _____ and _____ cannot both be zero