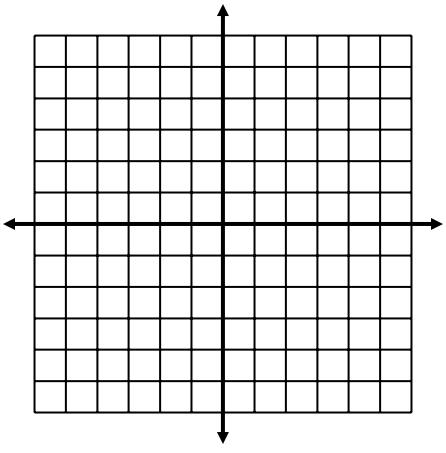
3.6 The Equation of a Line

Need To Know

- Graphing with a slope and intercept point
- Idea of the slope-intercept form of the equation of a line
- How to write equations of lines

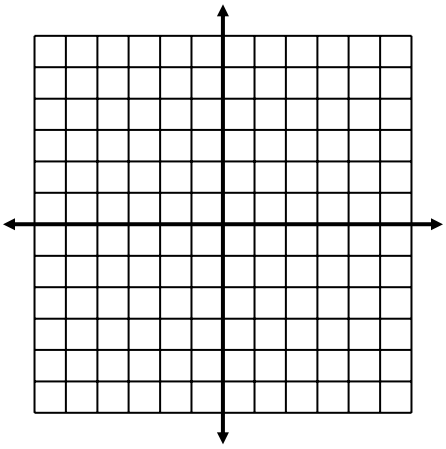
Graphing Slope and Intercepts

Graph the line with the slope of –2/5 and a y-intercept of 4.

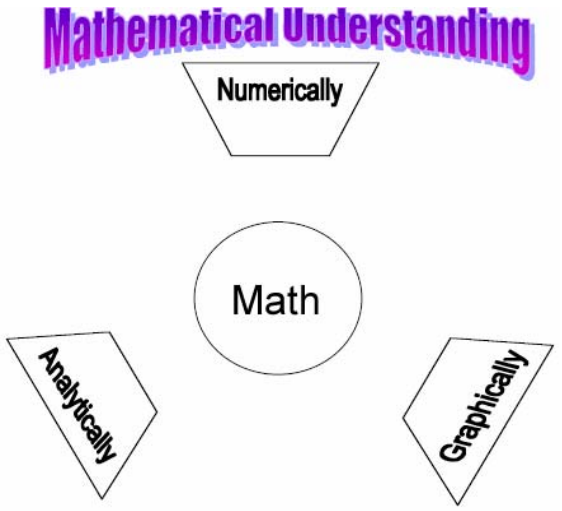


Graphing Slope and Intercepts

Graph the line with the slope of 3 and a y-intercept of -2.



A Model for Learning Math

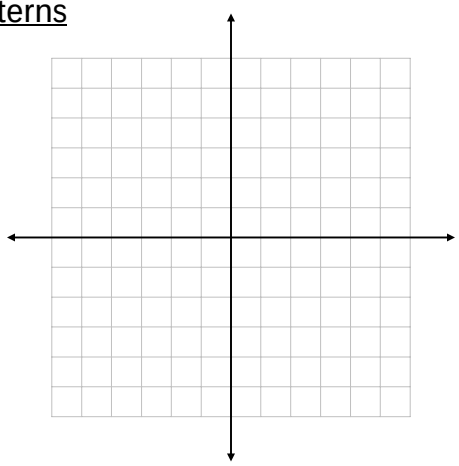


Equations of lines

WINDOW
Xmin = -6 Xmax = 6
Ymin = -6 Ymax = 6

Graph and observe patterns

- Y = 2x + 3
- Y = -1/3x + 3
- Y = x + 3
- Y = -4/5x + 3

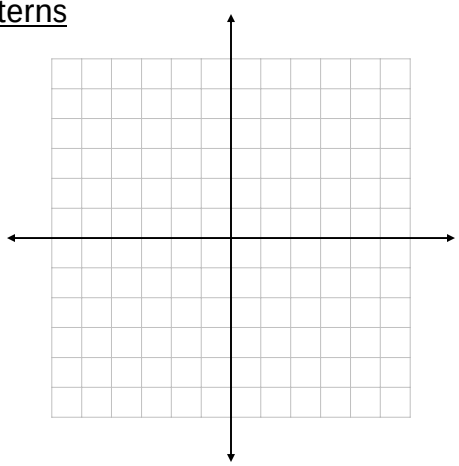


Equations of lines

WINDOW
Xmin = -6 Xmax = 6
Ymin = -6 Ymax = 6

Graph and observe patterns

- Y = 1/2x + 1
- Y = 1/2x + 3
- Y = 1/2x – 2
- Y = 1/2x – 4



Slope-Intercept Form for the Equation of a Line

Slope-Intercept Form
for the Equation of a Line

$y = mx + b$

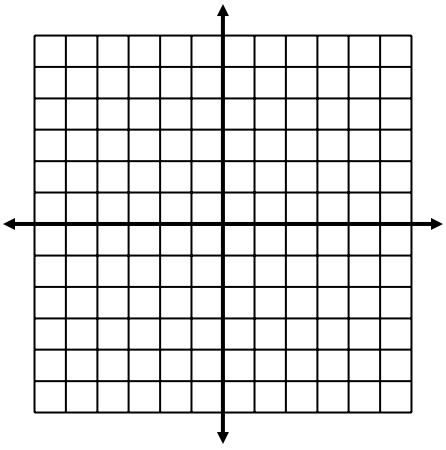
- m = the slope of the line
- b = the y coordinate of the y-intercept
  or (0, b) is the y-intercept point

Graphing y = mx + b

Find the slope and the y-intercept and graph

$$y = \frac{2}{3}x - 4$$

$3x - 2y = 18$



Writing an Equation for a Line

Need:

1. A point
2. A formula
3. A slope

To write and equation of a line you ...

Write the equation of the line with a slope of –3 and a y-intercept through the point (0, 5).

Write the equation of the line with a slope of 2/3 and a y-intercept through the point (0,-11).

end