

6.1

(4) CST items

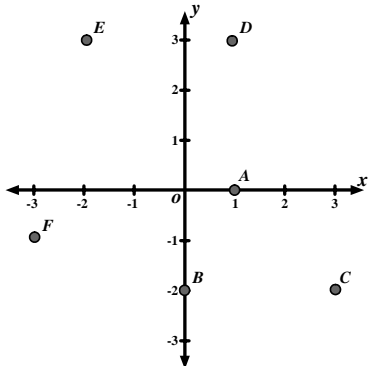
Students graph a linear equation and compute the x - and y - intercepts (e.g., graph $2x + 6y = 4$).

~~They are also able to sketch the region defined by a linear inequality (e.g., they sketch the region defined by $2x + 6y < 4$).~~

Key Vocabulary

Point	Axis (Axes)	Quadrant	Coordinate Plane
Data Table	Graph	Linear	Linear Equation
x -intercept	y -intercept	Slope	Slope-Intercept Form
Standard Form	Rise	Run	Intersect
Origin	Coordinate	Plot	Linear Inequality

Instructional Objectives

- 1 Identify, plot, and label points, axes, and quadrants on a coordinate plane.
- 1 Which point has the coordinates $(3, -2)$?
- 2 Which quadrant should contain the point $(-4, 13)$?
- 3 What are the coordinates of the point shown on the y -axis?
- 4 What are the coordinates of the point shown in quadrant III?
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- 2 Translate between data tables and linear equations.
- 1 Create a data table with at least 5 solutions for the equation $x - y = 10$.
- 2 Create a data table with at least 5 solutions for the equation $y = \frac{1}{2}x + 4$.
- 3 In the data table shown, what y value would correspond to an x value of 20?
- 4 Create an equation that relates the x and y values in the data table shown.
- | x | y |
|-----|-----|
| 0 | 3 |
| 1 | 5 |
| 2 | 7 |
| 3 | 9 |
| 10 | 23 |
| 100 | 203 |
- 3 Graph a linear equation in any form using a data table to generate points.
- 1 Graph the line: $x + y = 5$
- 2 Graph the line: $2x - y = 8$
- 3 Graph the line: $2x + 4y = 12$
- 4 Graph the line: $3x - 5y = 30$

4 Graph a linear equation in <i>slope-intercept</i> form.	1 ▶ Graph the equation $y = 2x + 5$.
	2 ▶ Graph the equation $y = x + 8$.
	3 ▶ Graph the equation $y = -\frac{2}{5}x - 4$.
	4 ▶ Graph the equation $y = \frac{1}{3}x + 5$.

5 Determine the x -intercept, y -intercept, and slope of a linear equation in any form.	1 ▶ What is the slope of the line: $y = \frac{1}{2}x - 3$?
	2 ▶ What is the y -intercept of the line: $y = -4x + 7$?
	3 ▶ What is the x -intercept of the line: $4x - 6y = 48$?
	4 ▶ What is the slope of the line: $-5y + 2x = -20$?

6 Given the graph of a line, state the corresponding linear equation in <i>slope-intercept</i> form.	1 ▶ State the equation of Line A .	
	2 ▶ State the equation of Line B .	
	3 ▶ State the equation of Line C .	
	4 ▶ State the equation of Line D .	

7 Convert a linear equation in any form to <i>slope-intercept</i> form and graph the line.	1 ▶ Convert to slope-intercept form: $x - 5y = 20$
	2 ▶ Solve for y : $6x - 3y = 30$
	3 ▶ State the slope and y -intercept of the line: $4x + y = 2$
	4 ▶ Solve for y and graph: $2x - 4y = -20$