

8 Algebra CC

Unit 6 Review (Linear Functions)

Important Terminology

coordinate plane	function	y-intercept	table of values
x-coordinate	linear function	x-intercept	slope-intercept
y-coordinate	vertical line	positive slope	intercept
ordered pair	horizontal line	negative slope	domain
origin	rate of change	zero slope	range
x-axis	slope	undefined slope	restricted domain
y-axis	rise	input	restricted range
quadrants	run	output	

Equations of Lines

Vertical Line
 $x = a$

Horizontal Line
 $y = b$

Slope-Intercept Form
 $y = mx + b$

Standard Form
 $Ax + By = C$

$$\text{Rate of Change (Slope)} = \frac{\Delta y}{\Delta x} = \frac{\text{rise}}{\text{run}} = \frac{\text{difference in } y\text{-values}}{\text{difference in } x\text{-values}}$$

What should I be able to do?

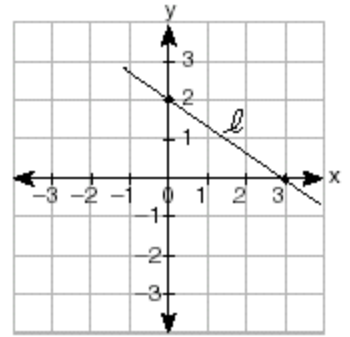
- Recognize a function from a graph, mapping diagram or set of points
 - Rewrite a linear equation in $y = mx + b$ form
 - Graph a linear function using a table of values
 - Graph a linear function by finding x and y-intercepts
 - Graph a linear function using the slope-intercept method
 - Determine if a point is part of the graph of a linear equation
 - Find the slope of a line from a graph using rise to run
 - Given two points, find the slope of a line using $\frac{\text{difference in } y\text{-values}}{\text{difference in } x\text{-values}}$
 - Graph horizontal and vertical lines
 - Graph linear functions with a restricted domain
 - State the domain and range of a graphed linear relationship
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Practice Problem Set – *show all work on a separate sheet of paper*

1. In this unit, we discussed three ways to graph a linear function. Using the example $4y - 2x = -16$, demonstrate each method of graphing and **explain** the process.
2. Is $(-95, -287)$ part of the graph of $y = 3x - 2$? Justify your response.
3. a) On the same set of axes, graph the following lines: $y = -1$ and $x = 6$
b) Name the point where the two lines intersect.

4. Which function rule creates the graph labeled ℓ ?

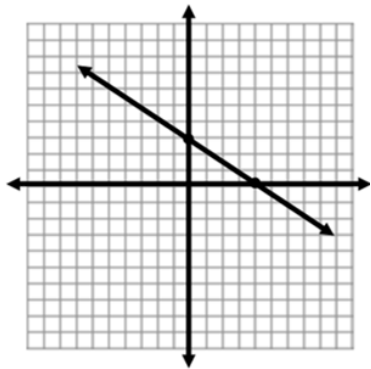
- A. Each output is equal to two-thirds the input subtracted from two
- B. Each output is equal to three halves the input subtracted from two
- C. Each output is equal to two more than two-thirds the input
- D. Each output is equal to two more than three halves the input



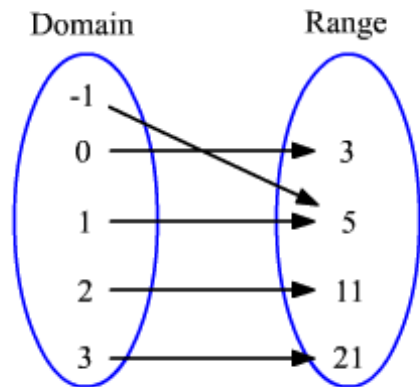
5. Kate says that the linear relationship pictured below can be represented by the equation

$$y = \frac{3}{4}x + 3.$$

Do you agree or disagree? Justify your response.



6. Does the relation below represent a function? Explain.



7. Determine the slope of the line passing through the following points.

a) (6, 3) and (1, 4)

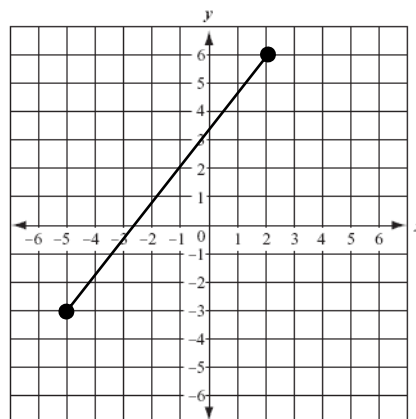
b) (-9, 4) and (-6, 4) What type of line is formed from these points?

8. a) Graph $y = \frac{2}{3}x - 4$ defined by the domain $-3 \leq x \leq 6$ where x is a real number.

b) State the range of the function.

9. Graph $4x - y = 8$ using any method.

10. State the domain and range of the graph.



Use the coordinate planes below for #'s 1, 3, 8 and 9.

