

Compare and Contrast

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Summary	Students will identify the y -intercept and slope using equations and then use that data to create corresponding tables and graphs.
Goals	1. Students will discover how different y -intercepts affect a function
Materials	Notebooks, overheads, whiteboard markers
Duration	45 minutes
Keywords	Compare and Contrast Functions Linear Functions Production of Graphs Production of Tables Slope Small Group Work y -intercept

Activity Plan:

Students start class with the following equations, in their binders. (Handout Page 1-4) They work individually to identify the y intercept and the slope for all four equations, and then to create the corresponding tables and graphs for two equations. They can talk to their tablemates as they make the tables and graphs.

Equations:

$$y = 2x$$

$$y = 2x + 4$$

$$y = 2x - 3$$

$$y = 2x - 3 - 1$$

Then the students work on their individual handouts, but discussing with their tablemates, to answer the following questions:

1. How are all of these equations alike in each representation?
2. How are all of these equations different in each representation?
3. Why do you think the fourth equation is written like that?

Handout: Compare and Contrast

(Page 1)

Name: _____ Date: _____

Answer the questions for these four functions:

		What is the y-intercept ?	What is the slope ?
<i>Function A</i>	$y = 2x$		
<i>Function B</i>	$y = 2x + 4$		
<i>Function C</i>	$y = 2x - 3$		
<i>Function D</i>	$y = 2x - 3 - 1$		

In these equations, what is *the same* about *all four* of these functions?
Explain in words.

In these equations, what is *different* about *all four* of these functions?
Explain in words.



Name: _____ Date: _____

Make a graph for Function C and for Function D



Name: _____ Date: _____

Look at the graphs and the tables you just made for functions C and D.

In these graphs, what is *the same* about *both* of these functions? Explain in words.

In these graphs, what is *different* about *both* of these functions? Explain in words.

Why do you think that the function D: $y = 2x - 3 - 1$ is written this way?