

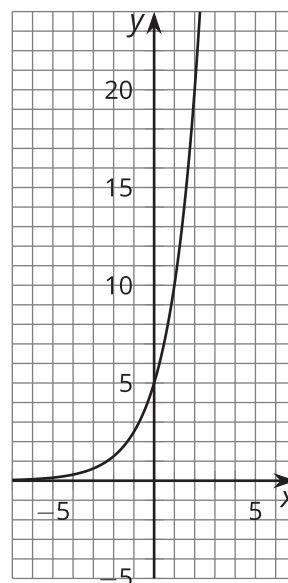
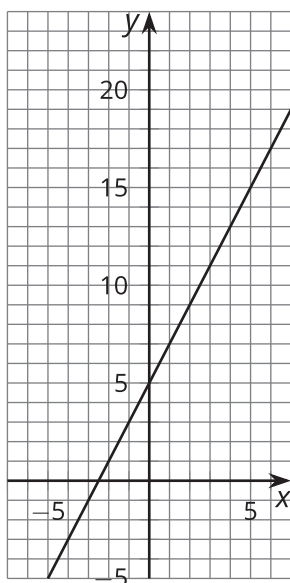
Lesson 10: Relating Linear Equations and their Graphs

- Let's connect functions to features of their graphs.

10.1: Notice and Wonder: Features of Graphs

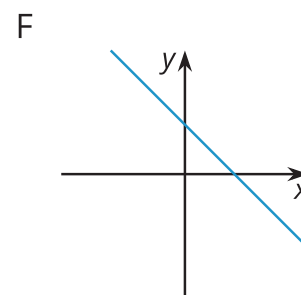
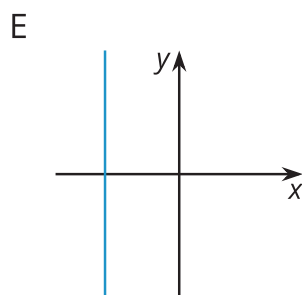
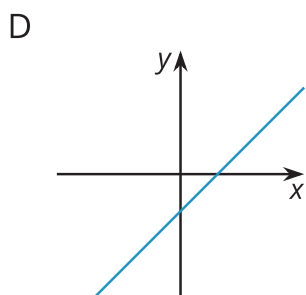
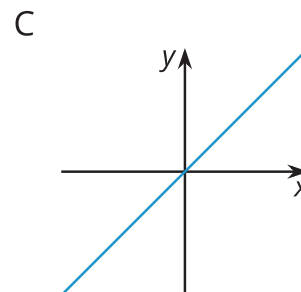
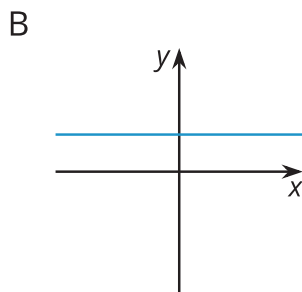
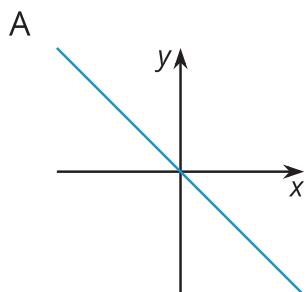
Here are graphs of $y = 2x + 5$ and $y = 5 \cdot 2^x$.

What do you notice? What do you wonder?



10.2: Making Connections

1. Here are some equations and graphs. Match each graph to one or more equations that it *could* represent. Be prepared to explain how you know.



$y = 8$

$y = 3x - 2$

$x + y = 6$

$0.5x = -4$

$y = x$

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

$12 - 4x = y$

$x - y = 12$

$2x + 4y = 16$

$3x = 5y$

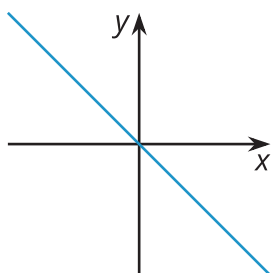
2. Choose either graph D or F. Let x represent hours after noon on a given day and y represent the temperature in degrees Celsius in a freezer.

In this situation, what does the y -intercept mean, if anything?

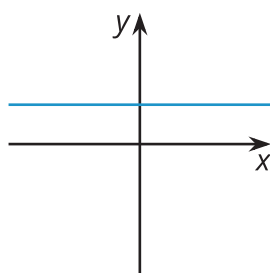
In this situation, what does the x -intercept mean, if anything?

10.3: Connecting Equations and Graphs

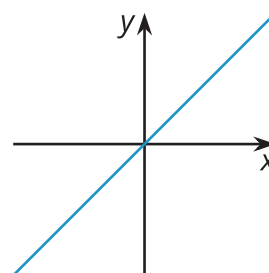
A



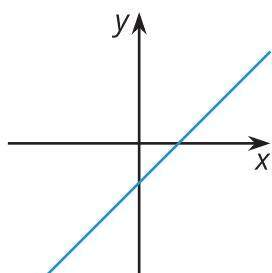
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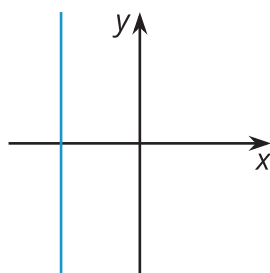
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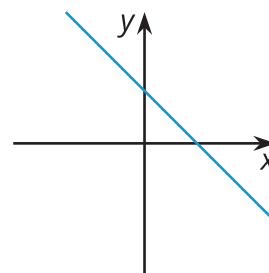
D



E



F



1. Without substituting any values for x and y or using technology, decide whether graph A could represent each equation, and explain how you know.

a. $4x = y$

b. $x - 8 = y$

c. $-5x = 10y$

d. $3y - 12 = 0$

2. Write a new equation that could be represented by:
a. Graph D

b. Graph F

3. On this graph, x represents minutes since midnight and y represents temperature in degrees Fahrenheit.

a. Explain what the intercepts tell us about the situation.

b. Write an equation that relates the two quantities.

