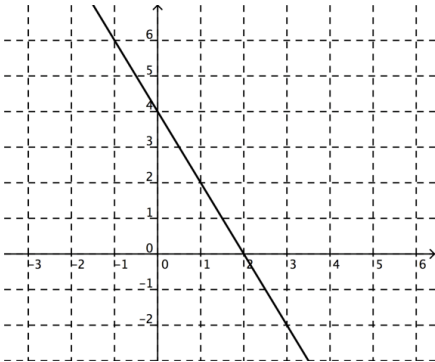


## CH. 2 SUMMATIVE REVIEW

1. What is the slope of the line shown below? (F-IF.6)



2. The function  $f$  represents the cost of a monthly cell phone plan given  $x$ , the number of minutes that the cell phone is used. (F-IF.6)

a. Explain the meaning of  $\frac{f(500) - f(450)}{50} = 0.05$ .

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b. If the function is linear, what is the value of  $\frac{f(600) - f(500)}{100}$  and what does it mean in context?

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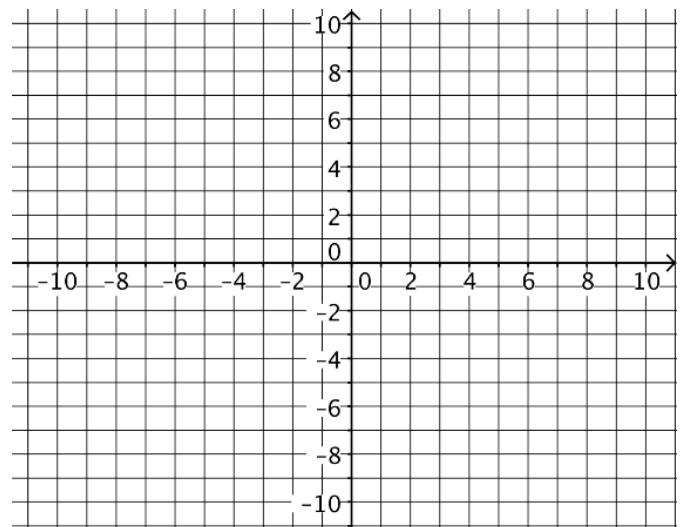


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3. The distance in miles,  $y$ , a bicyclist is from home after riding  $x$  hours is represented by the equation  $y = 8x + 7$ . What is the slope in this situation? What does the slope represent? (F-If.6)

4. Consider the line  $x + 2y = 6$ . (F-IF.7a)

a. Find the  $x$ - and  $y$ -intercepts of the line.



b. Sketch a graph of the line.

c. If the slope of the line were doubled, would the new  $x$ -intercept be the same, smaller, or larger than before?

CFS:

1. Highlight important information and circle the question/prompt.
2. Do the easy questions first. Circle the hard ones and come back to them later.
3. All work shown on paper OR one sentence justifying the answer you choose.

5. The solid line on the graph below represents the number of packs of soda sold at a fundraiser ( $x$ ) and the amount of money (\$) in the cash box ( $y$ ). (F-IF.7a)

a. How much cash was in the cash box prior to the start of the fundraiser? How do you know?

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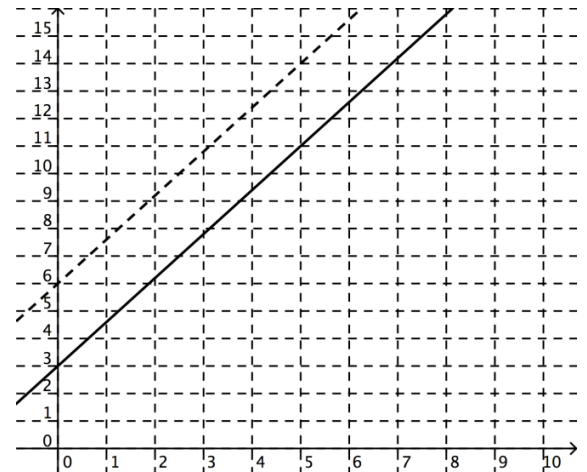
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b. What was the cost of each pack of soda?

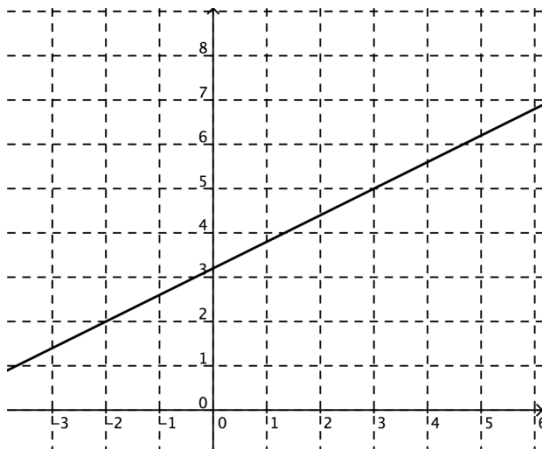
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c. If the dashed line were used instead of the solid line to represent the situation, what about the situation would be different?



6. Write the equation of the line graphed below. (F-IF.7a)



7. A skydiver is in a plane 2000 feet above ground. He jumps out of the plane, releases his parachute, and descends at a rate of 40 feet per second. (F-IF.7a)

a. Complete the following table.

<b>Time</b> (in seconds)	0	5	10	15
<b>Height</b> (in feet)				

b. Write an equation that represents this situation.

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c. What are the  $x$  and  $y$  intercepts and what do they represent given the context?

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CFS:

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3. All work shown on paper OR one sentence justifying the answer you choose.

8. A function  $f$  contains the points  $(0, 2)$  and  $(1, 10)$ . Write an equation and find the value of  $f(5)$ . (F-LE.2)

9. Given the tables below, write the equation of the linear function. (F-LE.2)

$x$	$f(x)$
0	10
2	6
3	4
5	0

10. The total number of miles Raul runs,  $R$ , including a 0.5-mile warm-up is given by the equation  $R = 6t + 0.5$ . The total number of miles Ben runs,  $B$ , including 0.25-mile warm-up, is given by the equation  $B = 5t + 0.25$ . If  $t$  represents time in hours after each runner's warm-up, which statement best compares Raul's speed to Ben's speed? (F-IF.6)

- A Raul's speed is 1 mile per hour faster than Ben's.
- B Raul's speed is 3 miles per hour faster than Ben's.
- C Raul's speed is 1 mile per hour slower than Ben's.
- D Raul's speed is 3 miles per hour slower than Ben's.

11. In 2005, a Caribbean nation produced 0.7 million tons of cane sugar. Annual production was projected to decrease by 0.05 million tons each year for the next five years. Which of the following functions models this situation where  $x$  represents the number of years since 2005 and  $y$  represents the amount of cane sugar, in millions of tons, produced in any given year between 2005 and 2010. (F-LE.2)

- a.  $y = 0.05x - 0.7$
- b.  $y = 0.7 - 0.05x$
- c.  $y = 0.7(0.95)^x$
- d.  $y = 0.7(1.05)^x$

CFS:

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3. All work shown on paper OR one sentence justifying the answer you choose.

12. An academic banquet for everyone who earned honors this term is being planned for Friday evening. The cost for opening the school during the evening is \$320. Each meal costs \$12. (F-LE.2, F-BF.4a)

- a. Write a function for the total cost of the banquet as a function of number of meals served.

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b. Use the function to find the total cost for 100 guests.

c. Use the function to find how many people can come to the banquet if \$2000 has been budgeted for the event.

13. In 2005 the population of Windsor, CT was estimated to be 28,778 people. In 2010 the population was about 28,153. (F-IF.6, F-LE.1)

- a. What is the average rate of change of Windsor's population during this time? Include proper units.

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- b. Was population increasing or decreasing? Explain how you know.

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14. Giribaldi sells candy at the football games. He started with 300 boxes of candy at the last home game. Every minute he sold 4 boxes. The amount of candy which Giribaldi has is a function of time. (F-IF.7e)

- a. Write the equation of this function.

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- b. How long will it take Giribaldi to sell all of the candy boxes? Justify your answer.

CFS:

1. Highlight important information and circle the question/prompt.
2. Do the easy questions first. Circle the hard ones and come back to them later.
3. All work shown on paper OR one sentence justifying the answer you choose.

15. Sam wants to take his MP3 player and his video game player on a car trip. An hour before they plan to leave, he realized that he forgot to charge the batteries last night. At that point, he plugged in both devices so they can charge as long as possible before they leave.

Sam knows that his MP3 player has 40% of its battery life left and that the battery charges by an additional 12 percentage points every 15 minutes.

His video game player is new, so Sam doesn't know how fast it is charging but he recorded the battery charge for the first 30 minutes after he plugged it in.

<b>time charging (minutes)</b>	0	10	20	30
<b>video game player battery charge (%)</b>	20	32	44	56

a. Which device charges at a faster rate? How do you know?

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b. Write an equation to represent how long it will take each device to charge.

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c. If Sam's family leaves as planned, what percent of the battery will be charged for each of the two devices when they leave?

d. How much time would Sam need to charge the battery 100% on both devices?

CFS:

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3. All work shown on paper OR one sentence justifying the answer you choose.

16. Which has a greater rate of change? The equation  $y = \frac{5}{2}x + 3$  or the table below? Explain how you know.

<b>x</b>	-1	0	1	2	3
<b>y</b>	-1	3	7	11	15

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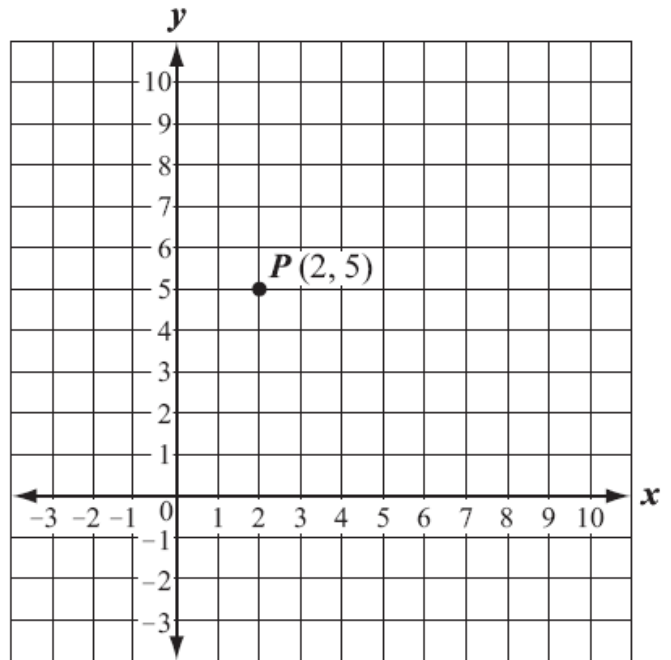
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17. Anthony then graphed line q on the same coordinate grid.

- Line q contains point P.
- The y-intercept of line q is the point with coordinates (0, 4).



a. What is the slope of line q? Show or explain how you got your answer.

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b. Write an equation of line q. Show or explain how you got your equation.

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CFS:

1. Highlight important information and circle the question/prompt.
2. Do the easy questions first. Circle the hard ones and come back to them later.
3. All work shown on paper OR one sentence justifying the answer you choose.