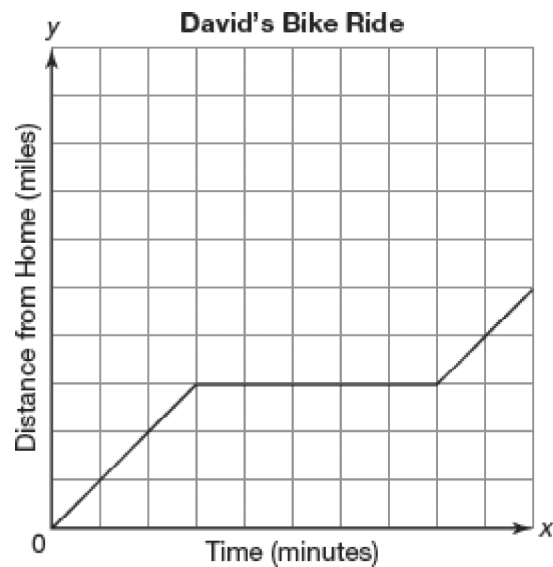


Integrated 3 Review**Integrated 3 Review Day 1: Function Notation, Graphing Linear Functions, Using the Vertical Line Test**

1. Hector knows there is a relationship between the number of cars he washes and the time it takes him to wash those cars. Identify the independent quantity and the dependent quantity in the problem situation.
2. David rode his bike to the park. After staying at the park for a few minutes, he then continued his ride to the grocery store. The graph shows this relationship. In the graph, what is the independent quantity and what is the dependent quantity?

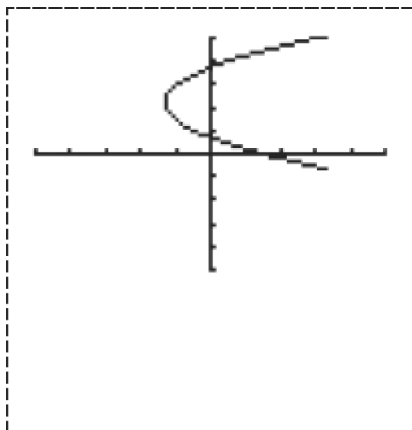


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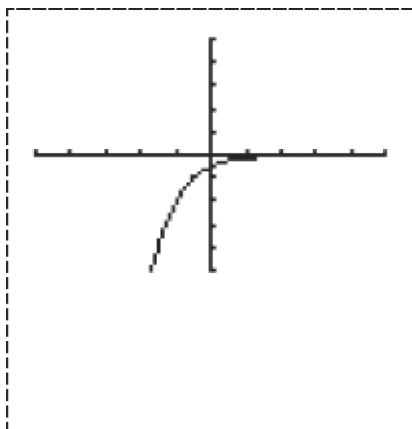
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3. Tell whether each graph represents a function.

a.



b.

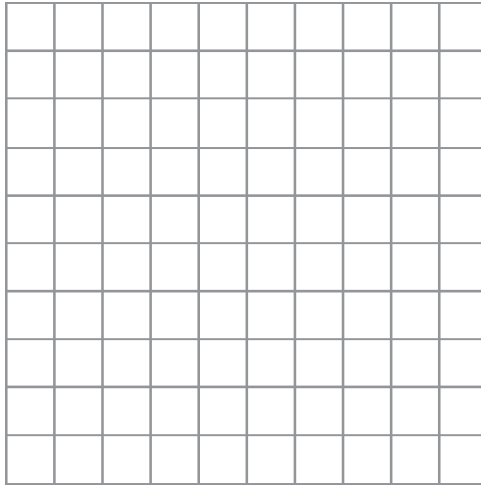


4. An elevator in a high-rise building moves upward at a constant rate. The table shows the height of the elevator above the ground floor after various times.

	Time	Height
Units	Seconds	Feet
	0	0
	1	12
	2	24
	3	
	4.5	
	5	
Expression	t	

- a. What are the dependent and independent quantities in this problem situation? Explain your reasoning.
- .
- b. Determine the unit rate of change for the problem situation.
- .
- c. Complete the table. Write an expression that represents the height for an arbitrary time t seconds in the last row.
- .
- d. Use function notation to determine the height of the elevator at a time of 14 seconds.
- .

5. Suppose an elevator starts at the top floor of a high-rise building at a height of 372 feet above the ground floor and descends without stopping at a constant rate of 15 feet per second.
- Write a function that describes the height, h , of the elevator after t seconds.
 - Graph the function that you wrote in part (a).



- Estimate when the elevator is at a height of 200 feet.
 - Determine the exact time that the elevator is at a height of 200 feet. Round to the nearest hundredth. Write your answer as an ordered pair.
.
6. Evaluate the function $f(x) = 31.572x - 17.741$ at each of these values. Write your answers as an ordered pair.
- $f(6.2)$
.
 - $f(-27.018)$
.

7. Harland owns a vegetable stand. He grows and sells his own vegetables at a stand in the city. He charges \$0.75 for each tomato, and each month five lucky passers-by get a free tomato. Harland always sells more tomatoes than he gives away.
- Write a linear function using function notation to represent the amount Harland earns each month. Let x represent the number of tomatoes distributed.
 - How much would Harland earn in a month if he distributed 80 tomatoes to customers? Show your work.
 - The next month, Harland decides to also sell cucumbers for \$0.60 each. Each month three lucky passers-by get a free cucumber. He always sells more cucumbers than he gives away. Write a linear function to represent the amount of money Harland earns each month from cucumber sales. Let x represent the number of cucumbers distributed.
 - Harland writes a function for the total amount of money he will earn for selling both items. His work is shown below. Is Harland correct? Explain why or why not.

$$p(x) = t(x) + c(x)$$

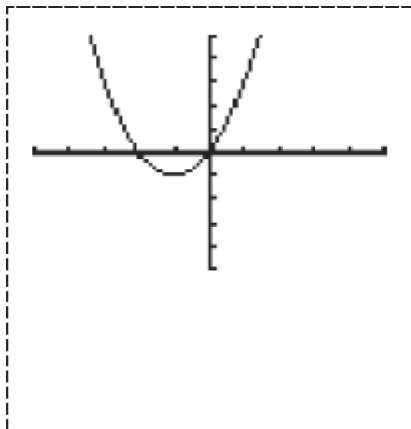
$$p(x) = 0.75(x - 5) + 0.6(x - 3)$$

$$p(x) = 0.75x - 3.75 + 0.6x - 1.8$$

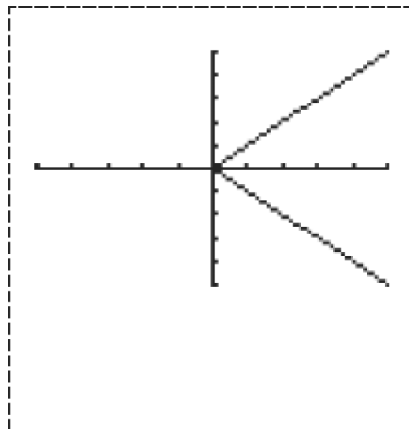
$$p(x) = 1.35x - 5.55$$

8. Tell whether each graph represents a function.

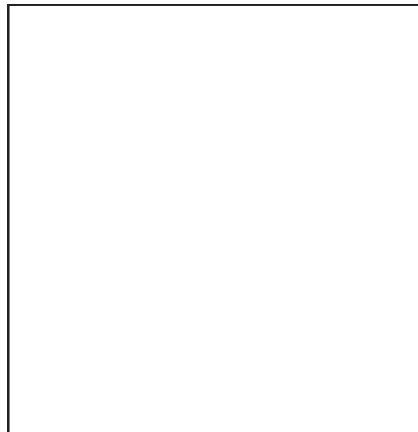
a.



b.



9. Identify each of the following for the function $f(x) = 3 \cdot 4^x$. Then graph the function.



- a. x -intercept(s)
- b. y -intercept
- c. asymptote
- d. domain
- e. range
- f. interval(s) of increase/decrease

10. The graph shows the average attendance for two schools. What does the solution $x = 14$ represent?

