Name _____ Date _____ Class _____

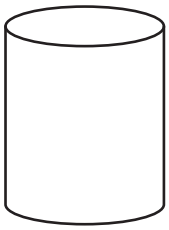
Additional Practice

Investigation 1

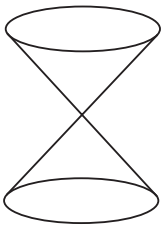
Function Junction

1. Abby and her sisters are completing a sand art project. They will fill the following containers with colored sand at a constant rate. Sketch a graph that represents the relationship between the height of the sand in the container and time.

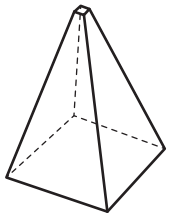
Bottle 1



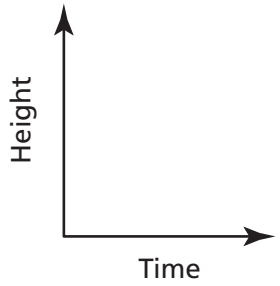
Bottle 2



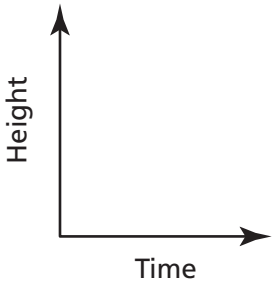
Bottle 3



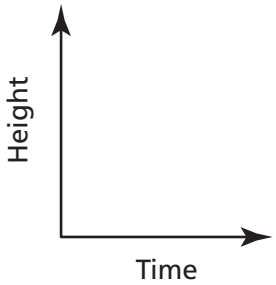
a. Graph 1



b. Graph 2



c. Graph 3



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Additional Practice *(continued)*

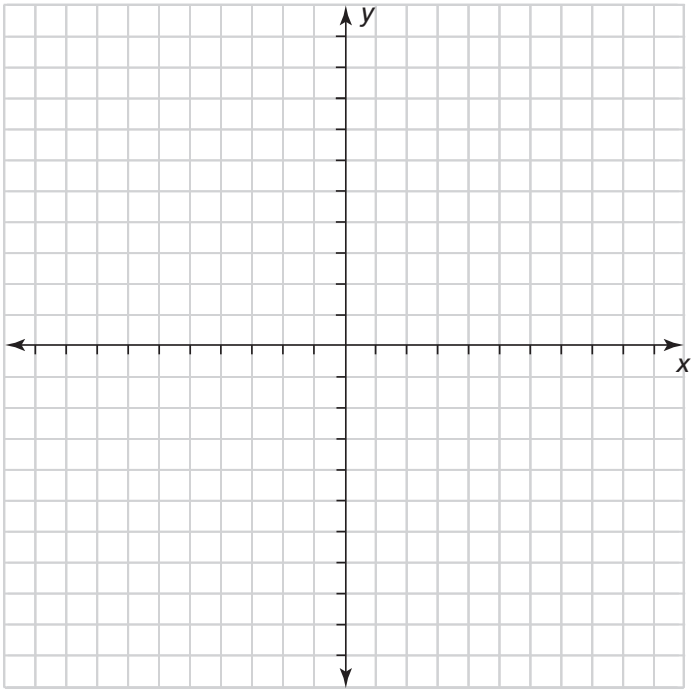
2. For parts (a)–(c), use the function $f(x) = -3x - 2$.

a. Complete the sentences to give correct statements.

$f(5) =$ $f(-1) =$ $f(\square) = -29$

b. Describe the domain and the range.

c. Sketch a graph of the function.



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Additional Practice *(continued)*

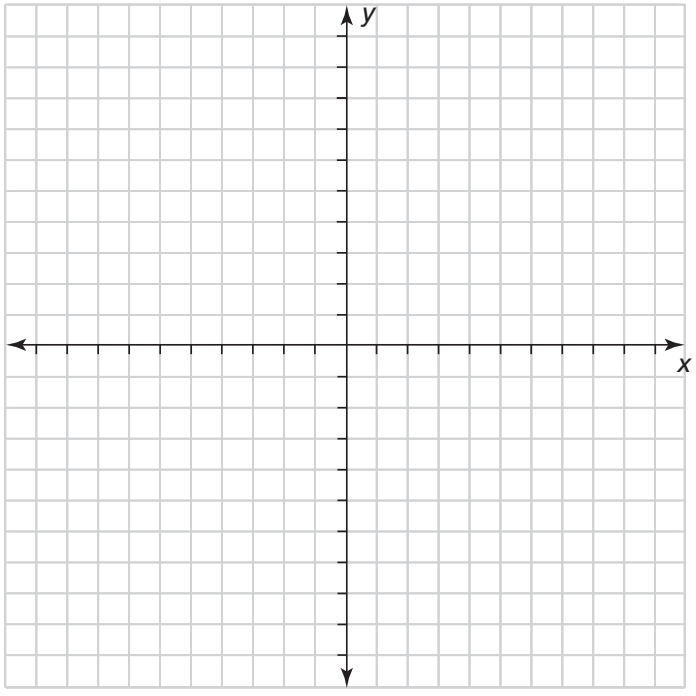
3. For parts (a)–(c), use the function $g(x) = -x^2 + 7$.

a. Complete the sentences to give correct statements.

$g(-2) =$ $g(3) =$ $g(\square) = 3$

b. Describe the domain and the range.

c. Sketch a graph of the function.



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Additional Practice *(continued)*

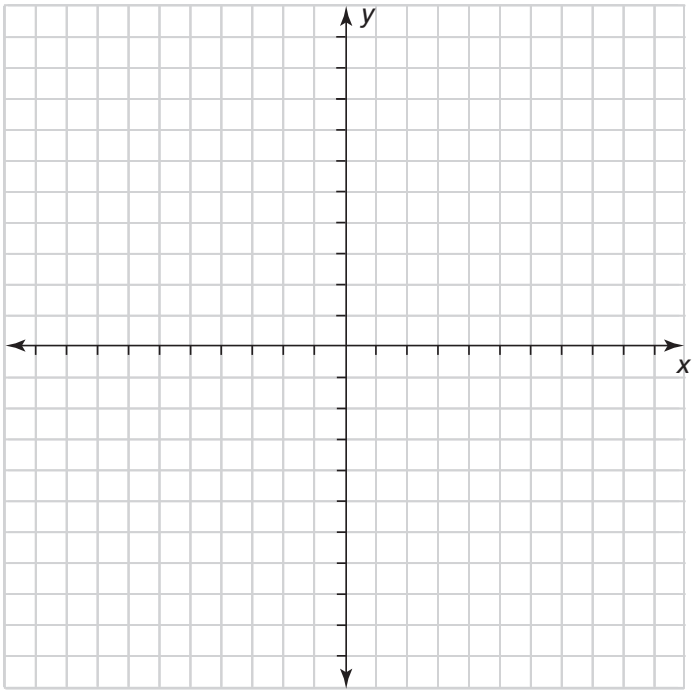
4. For parts (a)–(c), use the function $h(x) = 9(0.25)^x$.

a. Complete the sentences to give correct statements.

$h(2) =$ $h(-3) =$ $h(\square) = 36$

b. Describe the domain and the range.

c. Sketch a graph of the function.



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Additional Practice *(continued)*

5. Determine if the relationship in each table shows that y is a function of x.

a.

x	1	2	3	4	5
y	6	12	18	24	30

b.

x	4	5	3	4	5
y	2	4	6	8	10

c.

x	–5	–4	–3	–2	–1
y	6	12	6	24	6

d.

x	–1	0	1	3	–1
y	5	10	20	40	80

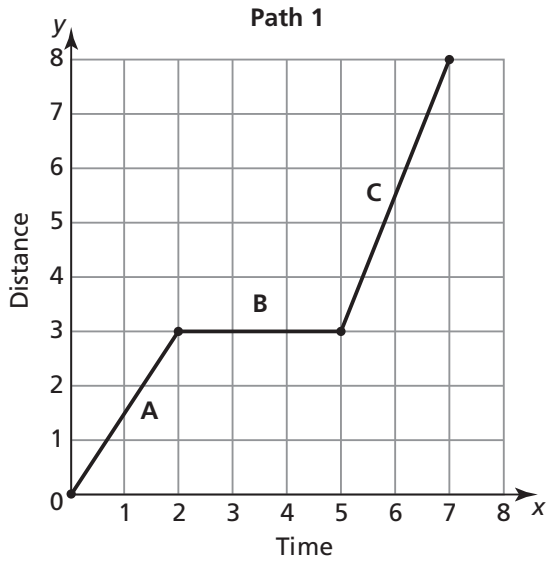
6. Jamail rides his bike to Kendrick's house. There are two paths he can take. Identify the parts of each graph that show:

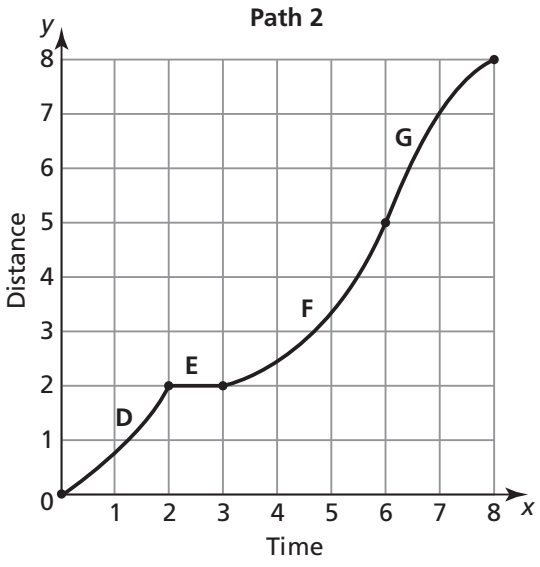
a. when Jamail is speeding up.

b. when Jamail is slowing down.

c. when Jamail is at a complete stop.

d. when Jamail is moving at a constant speed.





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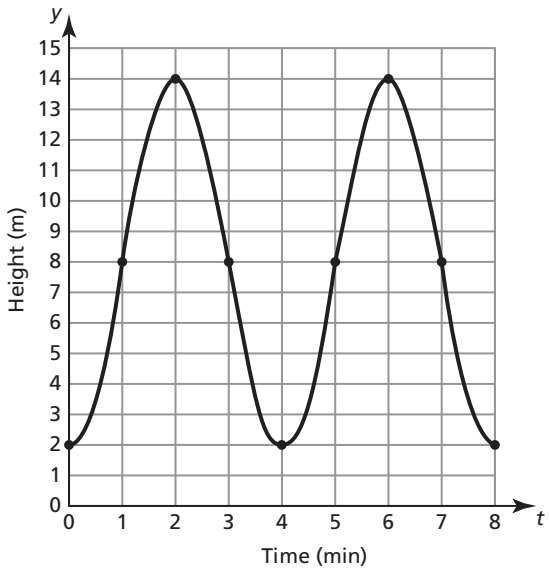
Additional Practice *(continued)*

For Questions 7 and 8, use the following information.

A person is riding a Ferris wheel. The person's height above the ground varies over the time of the ride. The graph of $h(t)$ gives the person's height in meters after a time t, in minutes, since the beginning of the ride.



7. What are the domain and range of the function?

8. Use the graph to complete the following statements, and explain what each statement tells about where the person is and what is happening on the ride.

a. $h(0) =$

b. $h(1) =$

c. $h(2) =$

d. $h(3) =$

e. $h(4) =$

f. $h(6) =$

g. $h(\square) = 2$ for $t > 6$

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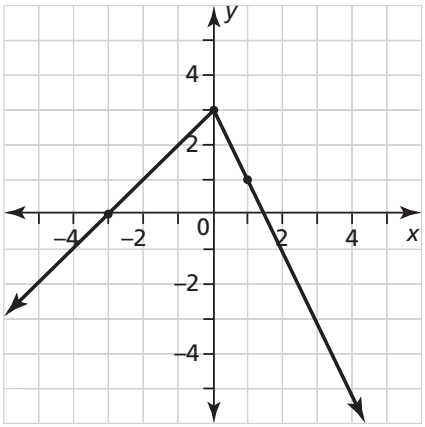
Additional Practice *(continued)*

9. Write a piece-wise rule for the function at the right.



10. Caroline posts her fees for babysitting.

Do You Need a Babysitter?

$5 for each hour or part of an hour.

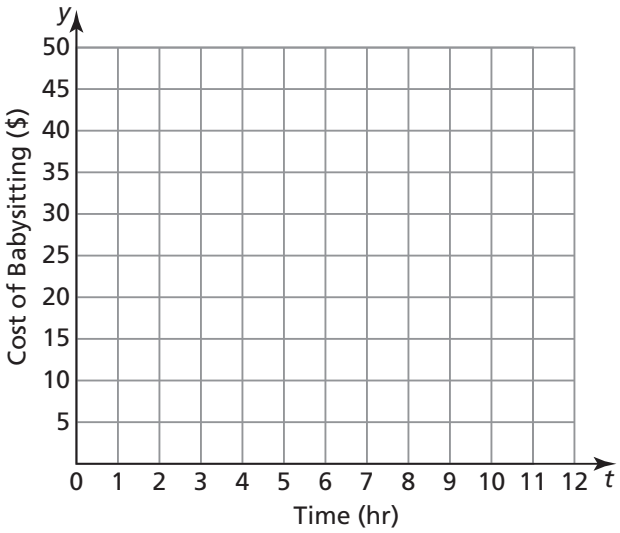
$50 maximum per day.

For parts (a)–(f), calculate the cost of babysitting $b(t)$ for the given times.

a. $b(0.5) =$ **b.** $b(3) =$ **c.** $b(5) =$

d. $b(9.25) =$ **e.** $b(10) =$ **f.** $b(16) =$

g. Draw a graph showing the charges for any time from 0 to 12 hours.



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Name _____ Date _____ Class _____

Additional Practice: Digital Assessments

Investigation 1

Function Junction

11. Circle the value that makes each statement true.

$f(x) = -x + 4$

a. $f(2) = \begin{bmatrix} -6 \\ -2 \\ 0 \\ 2 \\ 6 \end{bmatrix}$

b. $f\left(\begin{bmatrix} -16 \\ -8 \\ 0 \\ 8 \\ 16 \end{bmatrix}\right) = 12$

12. Circle the value that makes the statement true.

$f(x) = x^2 - 2x$

$f(-1) = \begin{bmatrix} -3 \\ -1 \\ 0 \\ 1 \\ 3 \end{bmatrix}$

13. A pool club is offering a special swim package. They are charging a one-time registration fee of $25 and a monthly fee of $45.

a. Which function can be used to find the cost, C, of the membership for m months? *Select all that apply.*

- ☐ $C(m) = 45m + 25$
- ☐ $C(m) = 45m - 25$
- ☐ $C(m) = 25m + 45$
- ☐ $C(m) = 45 - 25m$
- ☐ $C(m) = 25 + 45m$

b. Circle the cost of a 6-month membership.

$\begin{bmatrix} \$105 \\ \$150 \\ \$195 \\ \$255 \\ \$295 \end{bmatrix}$

14. Write each equation in the box with the appropriate domain or range. Equations may be used more than once.

$y = 2x + 1$ $y = 3x^2 - 4$ $y = 4(2)^x$ $y = -x + 3$ $y = -x^2 - 3$

Domain: All Real Numbers	Range: $y \geq -3$	Range: All Real Numbers

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