

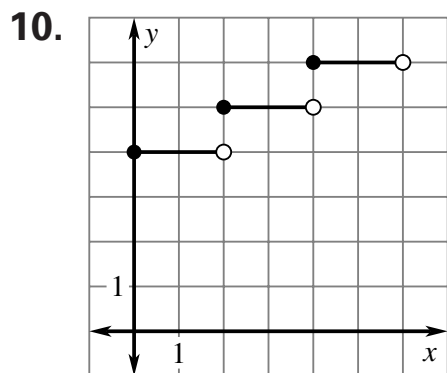
ANSWERS FOR 2.7

For use with pages 117–120

2.7 Guided Practice

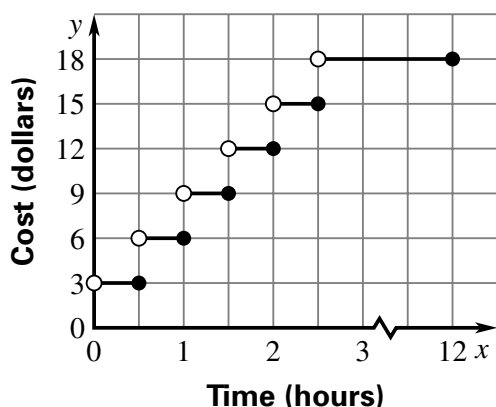
- The point is included; the point is not included.
- True; in substituting $x = 1, 2, 3$ into the greatest integer function, the graphical representation is the same as the earlier step function.

6. -2 8. -7



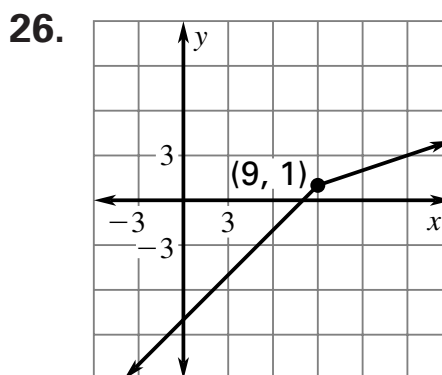
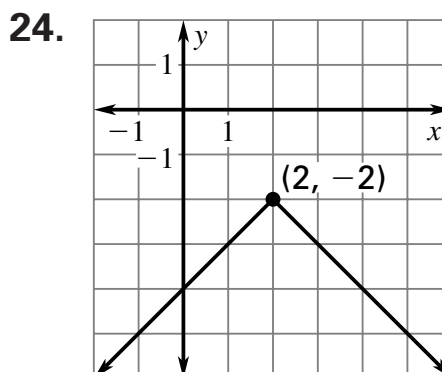
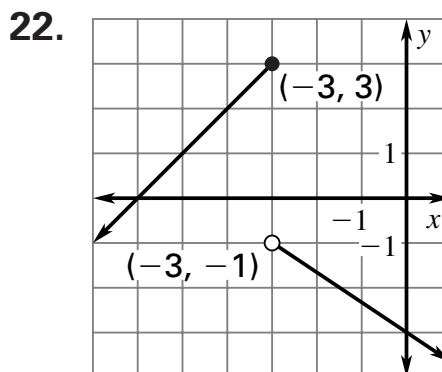
12. $f(x) = \begin{cases} 3, & \text{if } 0 < x \leq 0.5 \\ 6, & \text{if } 0.5 < x \leq 1 \\ 9, & \text{if } 1 < x \leq 1.5 \\ 12, & \text{if } 1.5 < x \leq 2 \\ 15, & \text{if } 2 < x \leq 2.5 \\ 18, & \text{if } 2.5 < x \leq 12 \end{cases}$

Parking Rates



2.7 Practice and Applications

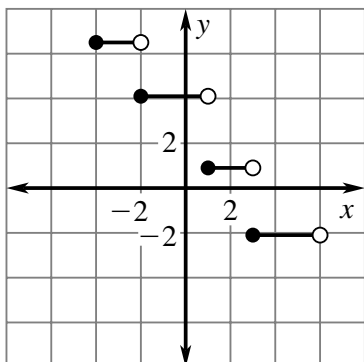
14. -11 16. -4
 18. -15 20. -10



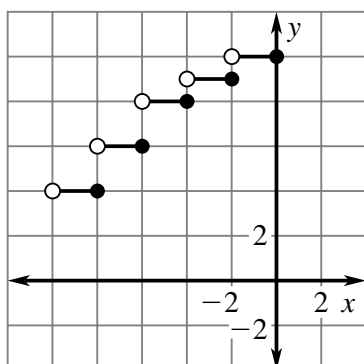
ANSWERS FOR 2.7 (CONT.)

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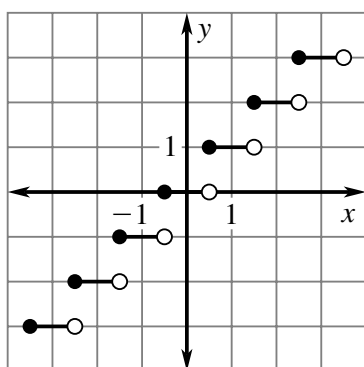
28.



30.



32.



Sample answer: The function maps each x -value to the integer it rounds to.

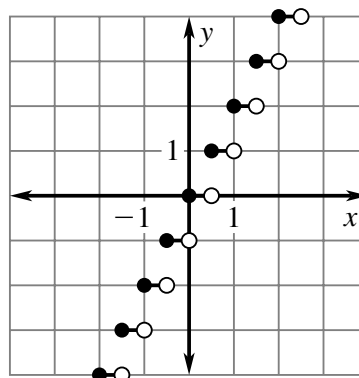
34. *Sample answer:* Each open circle on the graph would be replaced by a closed circle and each closed circle by an open circle, since $a <$ sign does not include the endpoint and goes with an open circle, while $a \leq$ sign does include the endpoint and goes with a closed circle.

$$36. f(x) = \begin{cases} 1, & \text{if } 0 \leq x < 2 \\ 3, & \text{if } 2 \leq x < 4 \\ 5, & \text{if } 4 \leq x < 6 \end{cases}$$

$$38. f(x) = \begin{cases} 3x + 10, & \text{if } x < -2 \\ & \text{(or } x \leq -2) \\ 4, & \text{if } -2 \leq x \leq 2 \\ & \text{(or } -2 < x < 2) \\ -3x + 10, & \text{if } x > 2 \\ & \text{(or } x \geq 2) \end{cases}$$

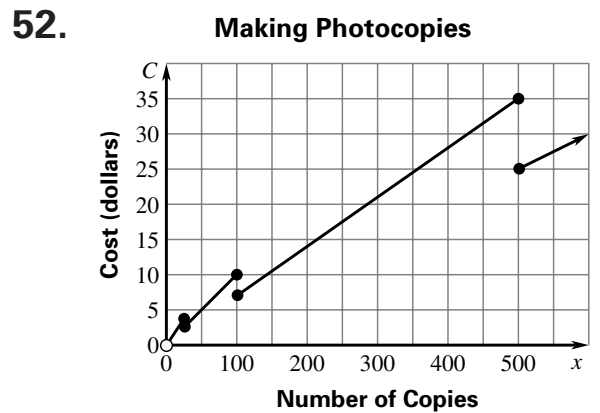
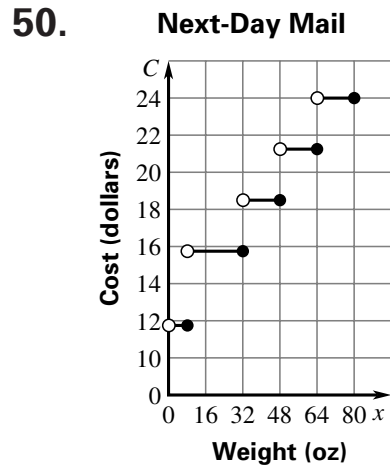
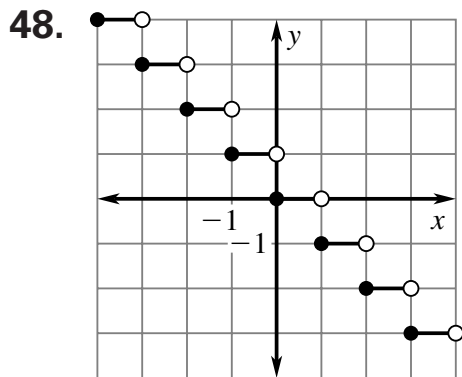
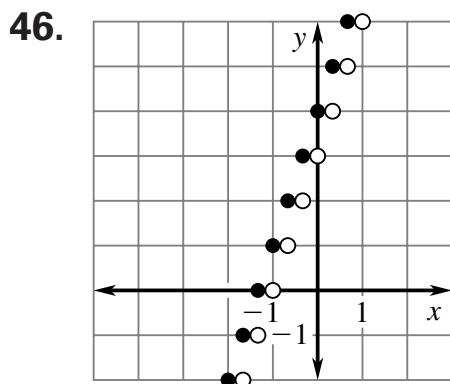
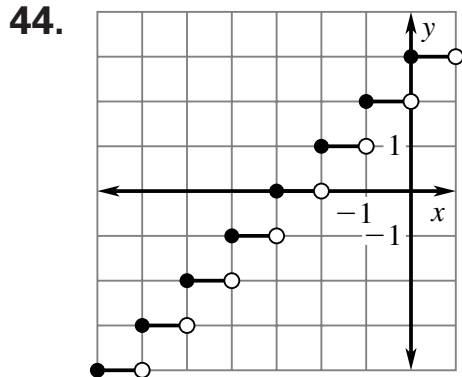
$$40. f(x) = \begin{cases} 1, & \text{if } -1 < x \leq 0 \\ 2, & \text{if } -2 < x \leq -1 \\ 3, & \text{if } -3 < x \leq -2 \\ 4, & \text{if } -4 < x \leq -3 \\ 5, & \text{if } -5 < x \leq -4 \end{cases}$$

42.



ANSWERS FOR 2.7 (CONT.)

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54.

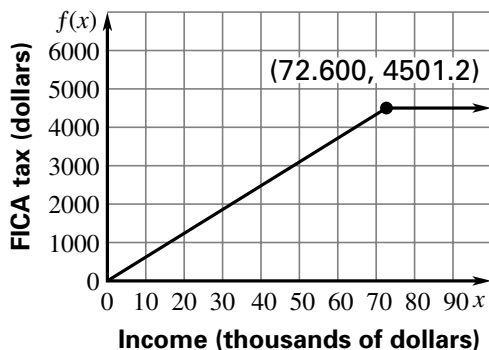
$$c(x) = \begin{cases} 20 + 17x, & \text{if } 0 < x \leq 50 \\ 20 + 15.80x, & \text{if } x > 50 \end{cases}$$

56.
$$f(x) = \begin{cases} 0.062x, & \text{if } 0 < x < 72,600 \\ 4501.20, & \text{if } x \geq 72,600 \end{cases}$$

ANSWERS FOR 2.7 (CONT.)

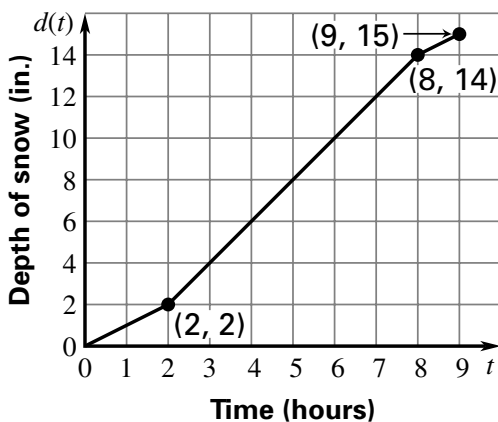
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Social Security Tax



58.
$$d(t) = \begin{cases} t, & \text{if } 0 \leq t \leq 2 \\ 2t - 2, & \text{if } 2 < t \leq 8 \\ t + 6, & \text{if } 8 \leq t \leq 9 \end{cases}$$

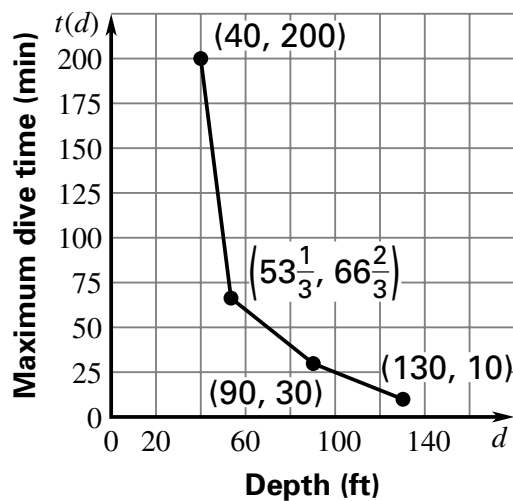
Snowfall During a Storm



60. A

62.
$$t(d) = \begin{cases} 600 - 10d, & \text{if } 40 \leq d < 53\frac{1}{3} \\ 120 - d, & \text{if } 53\frac{1}{3} < d < 90 \\ 75 - 0.5d, & \text{if } 90 \leq d \leq 130 \end{cases}$$

Scuba Diving

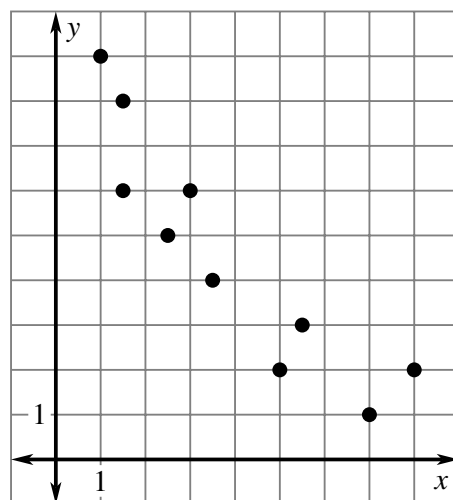


64. $\frac{8}{7}; -2$

66. $-\frac{7}{2}; -\frac{9}{2}$

68. $-\frac{20}{3}; \frac{28}{3}$

70.



negative correlation