Answers to Algebra 1 L4.7 Piecewise Functions 3-19 odd, 23-33 odd, 37-45 odd

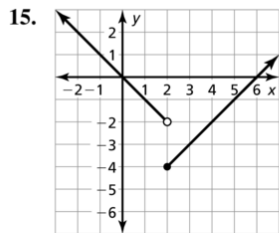**3.** -16

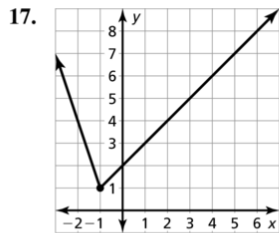**5.** 3

7. 8

9. 3

11. -1

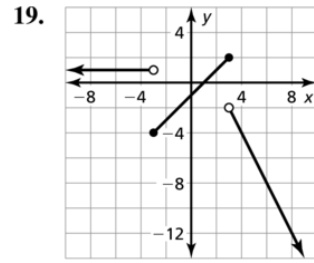**13.** 240 mi

15.

domain: all real numbers; range: $y \geq -4$

17.
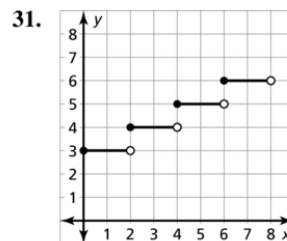

domain: all real numbers; range: $y \geq 1$

19.

domain: all real numbers; range: $y \leq 2$

23. $f(x) = \begin{cases} x + 2, & \text{if } x < 0 \\ 2, & \text{if } x \geq 0 \end{cases}$

25. $f(x) = \begin{cases} -x, & \text{if } x < 4 \\ -x + 1, & \text{if } x \geq 4 \end{cases}$
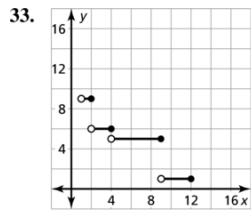
27. $f(x) = \begin{cases} 1, & \text{if } x \leq -2 \\ 2x, & \text{if } -2 < x \leq 0 \\ -\frac{1}{2}x + 2, & \text{if } x > 0 \end{cases}$

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

31.

domain: $0 \leq x < 8$; range: $3, 4, 5, 6$

33.

domain: $1 < x \le 12$; range: $1, 5, 6, 9$

37. $y = \begin{cases} -x + 1, & \text{if } x < 0 \\ x + 1, & \text{if } x \ge 0 \end{cases}$

39. $y = \begin{cases} -x + 2, & \text{if } x < 2 \\ x - 2, & \text{if } x \ge 2 \end{cases}$

41. $y = \begin{cases} -2x - 6, & \text{if } x < -3 \\ 2x + 6, & \text{if } x \ge -3 \end{cases}$

43. $y = \begin{cases} 5x - 40, & \text{if } x < 8 \\ -5x + 40, & \text{if } x \ge 8 \end{cases}$

45. $y = \begin{cases} x - 1, & \text{if } x < 3 \\ -x + 5, & \text{if } x \ge 3 \end{cases}$