Lesson 11.1.4

11-38. **a.** $\approx -2.3, 0, 3.3$ **b.** $2, -3$ **c.** ≈ -3.7 **d.** No

11-39. **a.** $-1, -2, -6$
b. There is no solution because you cannot divide by zero.
c. No; the error occurs when the denominator is 0, and 3 is the only value that causes that to happen.
d. All numbers except $x = 3$ ~ $D: X \neq 3$

11-40. **a.** Yes; each input has exactly one output. **b.** $-2 \leq x \leq 4$ **c.** $-1 \leq y \leq 3$
d. No; he is missing all the values between those numbers. The curve is continuous, so our description needs to include all the numbers, not just the integers.

11-41. See solutions below.

a. D. $-3 \leq x \leq 3$, R. $-3 \leq y \leq 3$ **b.** D. $-\infty < x < \infty$, R. $-\infty < y < \infty$
c. D. $-2 \leq x \leq 4$, R. $-4 \leq y \leq 2$ **d.** D. $-\infty < x < \infty$, R. $y \leq 4$
e. D. $2 \leq x \leq 4$, R. $-3 \leq y \leq 2$ **f.** D. $-2, -1,$ and 4, R. $-4, -1, 1,$ and 2

11-42. **a.** No; we only know that the integers used in the table worked. We do not know about the numbers between the integers or those beyond the table.

b. Not quite. If we knew that $f(x)$ was a parabola, then $(0, -4)$ would be the vertex and then the range would be the set of numbers greater than or equal to -4. However, since we were not told the rule, that is an assumption. In fact, we cannot even assume that the relation is continuous; it could just consist of the points listed in the table.
c. No.

11-43. **a.** $-\infty < x < \infty$ **b.** All y-values greater than -2.
$y > -2$
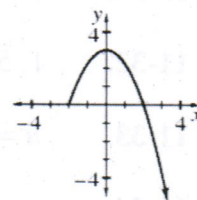
11-44. There are many possible solutions. See example at right.

11-45. **a.** not a function as more than one y-value is assigned for x between -1 and 1 inclusive
b. appears to be a function
c. not a function because there are two different y-values for $x = 7$
d. function

11-46. **a.** x-intercepts $(-1, 0)$ and $(1, 0)$, y-intercepts $(0, -1)$ and $(0, 4)$
b. x-intercept $(19, 0)$, y-intercept $(0, -3)$
c. x-intercepts $(-2, 0)$ and $(4, 0)$, y-intercept $(0, 10)$
d. x-intercepts $(-1, 0)$ and $(1, 0)$, y-intercept $(0, -1)$

11-47. Marisol. $y = 2x$, Mimi. $y = 3x - 3$, solution: $x = 3$ hrs, so 6 miles

11-48. No; the slope of $\overline{AB}$ is $\frac{3}{5}$, while the slope of $\overline{AC}$ is $\frac{5}{8}$ and the slope of $\overline{BC}$ is $\frac{2}{3}$.

11-49. **a.** $x = 6 + \frac{2}{3}y$ **b.** $y = \frac{3}{2}x - 9$ **c.** $r = \frac{d}{t}$ **d.** $r = \frac{C}{2\pi}$ **11-50.** **a.** $\frac{2x-5}{x-6}$ **b.** $x + 4$