

- (d) The pool is empty at the beginning and then is filled to a level of 3000 gal during the first 25 hr. For the next 25 hr, the water level remains the same. At 50 hr, the pool starts to be drained, and this draining lasts for 25 hr, until only 2000 gal remain. For the next 25 hr, the water level is unchanged.

Now try Exercise 79.

2.2 Exercises

3. independent variable
 4. One example is $\{(-3, 4), (2, 4), (2, 6), (6, 4)\}$.
 5. function 6. function
 7. not a function
 8. not a function 9. function
 10. function 11. not a function; domain: $\{0, 1, 2\}$; range: $\{-4, -1, 0, 1, 4\}$
 12. function; domain: $\{2, 3, 4, 5\}$; range: $\{5, 7, 9, 11\}$ 13. function; domain: $\{2, 3, 5, 11, 17\}$; range: $\{1, 7, 20\}$ 14. not a function; domain: $\{1, 2, 3, 5\}$; range: $\{10, 15, 19, 27\}$
 15. function; domain: $\{1997, 1998, 1999, 2000\}$; range: $\{547,200,000, 528,500,000, 564,100,000, 587,100,000\}$
 16. function; domain: $\{1998, 1999, 2000\}$; range: $\{7,387,000, 8,010,000, 8,698,000\}$

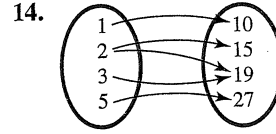
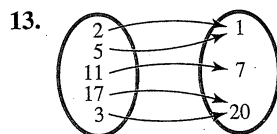
1. In your own words, define a function and give an example.
 2. In your own words, define the domain of a function and give an example.
 3. **Concept Check** In an ordered pair of a relation, is the first element the independent or the dependent variable?
 4. **Concept Check** Give an example of a relation that is not a function, having domain $\{-3, 2, 6\}$ and range $\{4, 6\}$. (There are many possible correct answers.)

Decide whether each relation defines a function. See Example 1.

5. $\{(5, 1), (3, 2), (4, 9), (7, 6)\}$ 6. $\{(8, 0), (5, 4), (9, 3), (3, 8)\}$
 7. $\{(2, 4), (0, 2), (2, 5)\}$ 8. $\{(9, -2), (-3, 5), (9, 2)\}$
 9. $\{(-3, 1), (4, 1), (-2, 7)\}$ 10. $\{(-12, 5), (-10, 3), (8, 3)\}$

Decide whether each relation defines a function and give the domain and range. See Examples 1–4.

11. $\{(1, 1), (1, -1), (0, 0), (2, 4), (2, -4)\}$ 12. $\{(2, 5), (3, 7), (4, 9), (5, 11)\}$



15. **Number of Rounds of Golf Played in the U.S.**

Year (x)	Number of Rounds (y)
1997	547,200,000
1998	528,500,000
1999	564,100,000
2000	587,100,000

Source: National Golf Foundation.

16. **Attendance at NCAA Women's College Basketball Games**

Year (x)	Attendance
1998	7,387,000
1999	8,010,000
2000	8,698,000

Source: National Collegiate Athletic Association.