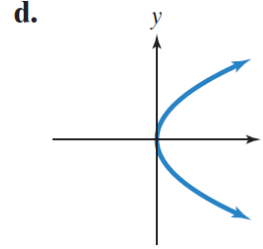
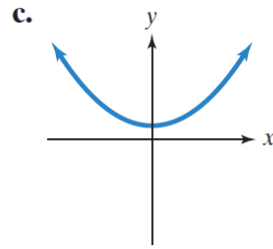
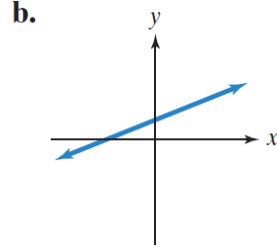
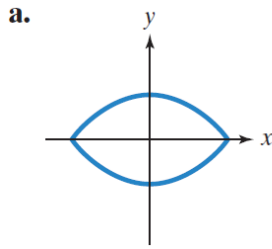


# 1.2.D1 – FUNCTIONS & FUNCTION NOTATION

1. Use the Vertical Line Test to determine whether the graph represents a function in the rectangular coordinate system.



Determine whether or not each of the situations describes a function. Give a reason for your answer.

2. The letter grade in this course is a function of your numerical grade.
3. The numerical grade in this course is a function of the letter grade.
4.  $\{(2, 4), (-3, 5), (5, -5), (\pi, 5)\}$
5.  $\{(-5, 2), (5, -3), (1, 10), (5, \pi)\}$

6.

Domain	Range
-6	-5
-3	-2
0	-2
1	0
4	3
5	7

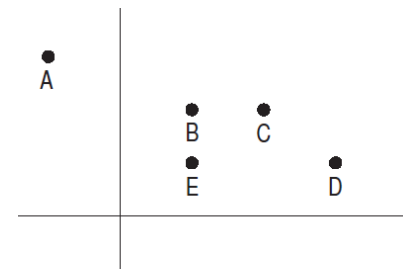
7.

Domain	Range
-7	4
-2	6
-1	-1
-1	3
0	5
1	5

8.

Domain	Range
-5	4
-4	4
-3	4
0	0
1	4
2	4

9. Which one point can be removed from Figure 1.1 to make it the graph of a function?



10. In the table, the amount of snowfall is a function of the elevation.
- a. Identify the independent variable and the dependent variable.
  - b. Let  $x$  represent the elevation and  $a(x)$  represent the amount of snowfall. Determine  $a(4000)$ .
  - c. Write a sentence explaining the meaning of  $a(5000) = 12$ .
  - d. Suppose we switch the independent and dependent variables. Is the elevation a function of the snowfall? Explain your reasoning.

Figure 1.1

Elevation (in feet)	Snowfall (in inches)
2000	4
3000	6
4000	9
5000	12

Problem 11 – 13: Let  $f(x) = x^2 - x + 4$  and  $g(x) = 3x - 5$ .

11. Evaluate  $g(-1)$ .

12. Evaluate  $f(g(1))$ .

13. Solve  $g(x) = 7$ .

14. Let  $f(t)$  be the number of people, in millions who own cell phones  $t$  years after 1990. Explain the meaning of the following statement  $f(10) = 100.3$ .

15. The function  $C(t) = 20 + 0.40(t - 60)$  describes the monthly cost,  $C(t)$ , in dollars, for a cellular phone plan for  $t$  calling minutes, where  $t > 60$ . Find and interpret  $C(100)$ .

16. The number of students enrolled for the semester at Chandler-Gilbert Community College has been growing in recent years. The number of students can be modeled by the function  $C(y) = 168.9y + 6741$  where  $C$  is the number of students enrolled and  $y$  is the years since 2003. Solve  $C(y) = 9000$  for  $y$  and write the solution in function notation. Explain what the numerical answer represents in its real-world context.