

Instructions: Write complete legible solutions to the following problems in the space provided. Be sure to supply all the necessary steps that lead to your answers.

Functions

A function is relation that assigns to every element in a set called the domain exactly one element in a set called the range.

- 1 Determine whether the given relation defines a function. Give a reason for your answer.

a.

Input	1	2	3	4	5
Output	-1	2	1	-1	1

b.

Input	1	1	3	4	5
Output	-1	0	1	-1	1

c. $f(x) = \{(1,2), (3,4), (5,6), (7,8)\}$

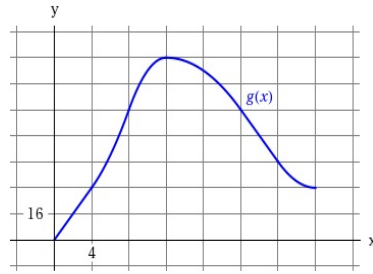
d. $f(x) = \{(1,1), (1,3), (5,4), (7,8)\}$

e. $x^2 + 2y^2 = 1$

f. $x + y^3 = 1$

2. Find the domain and the range of the given function.

a.



Domain:

Range:

b. $f(x) = \{(-1, 0), (1, 2), (4, 5)\}$

Domain:

Range:

c. $g(x) = x^2 - 3x$

Domain:

Range:

d. $h(x) = \frac{2}{x^2 - x}$

Domain:

Range:

e. $q(x) = \frac{\sqrt{x^2 - 9}}{x - 3}$

Domain:

Range: