

## 5-5

A \_\_\_\_\_ is a relation in which each element of the domain (\_\_\_\_\_) is paired with exactly one element of the range (\_\_\_\_\_).

Equations that are **functions** can be written in a form called \_\_\_\_\_ notation,  $f(x)$  (read "f of x").

In a function,  $x$  is an element of the domain and  $f(x)$  is the corresponding element in the range.

## EXAMPLES

Is  $\{(1, 2), (1, 3)\}$  a function?

Is  $\{(1, 4), (3, 2), (5, 4)\}$  a function?

1st relation: yes / not a function

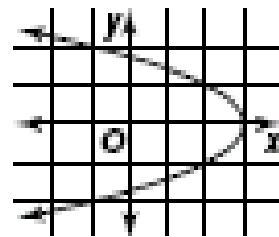
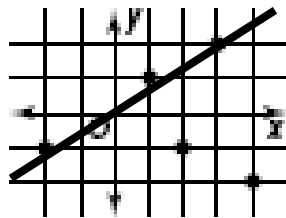
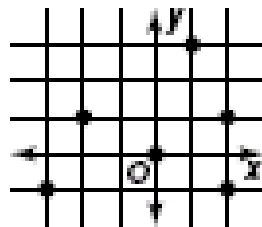
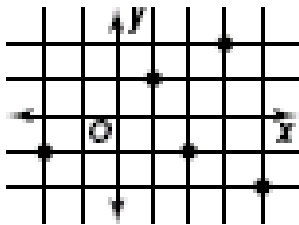
Because:

2nd relation: yes / not a function

Because:

## Vertical Line Test

If each \_\_\_\_\_ line passes through no more than one point of the graph of a relation, then the relation is a function.



**Find each value:**

If  $f(x) = 3x - 1$  and  $g(x) = 2x$ ,  
find  $f(1)$  and  $g(3)$ .

*Replace  $x$  with 1*

$$f(x) = 3x - 1$$

$$f(1) =$$

.

*Replace  $x$  with 3*

$$g(x) = 2x$$

$$g(3) =$$

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