

## Day 2 relations and functions

1<sup>st</sup> 5

State the domain and range of each relation.

1)  $\{(-2,3), (4,-5), (-5,3), (2,4), (-1, -2)\}$

2)  $\{(3,6), (-4,3), (2,3), (3,4), (-4, 4)\}$

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## Relations and Functions

□ A **function** is a relations that assigns exactly one value in the range to each value in the domain.

▣ For every  $x$ , there

▣ For every domain, there

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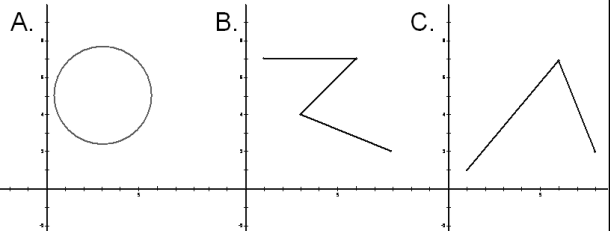
## TESTS FOR FUNCTIONS

1. One way you can tell whether a relation is a function is to analyze the graph of the relation using the

▣ If any vertical line passes through of the graph, the relation is a function.

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□ Using the Vertical – Line Test to determine the functions

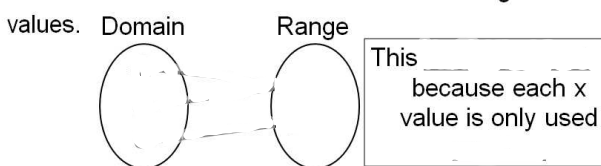


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## TESTS FOR FUNCTIONS

2. Another way you can tell whether a relation is a function is by making a

List the domain values and the range values in order. Draw arrows from the domain value to the range values.



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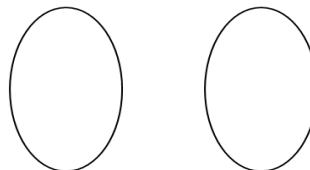
□ Using a Mapping Diagram

▣ Determine whether the relation is a function

▣  $\{(11, -2), (12, -1), (12, -2), (20, 7)\}$

Domain

Range



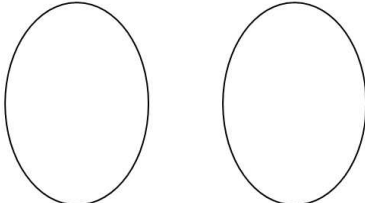
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## Day 2 relations and functions

**Determine whether each relation is a function.**

□ [(3, -2), (8, 1), (9, 2), (3, 3), (-4, 0)]

Domain                      Range



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□ A \_\_\_\_\_ is an equation that describes a function. You can think of a function rule as an input-output machine.

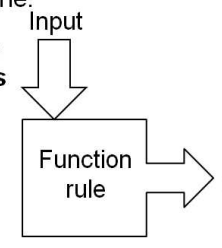
The \_\_\_\_\_ is the set of input values

Input

Function rule

Output

The \_\_\_\_\_ is the set of output values



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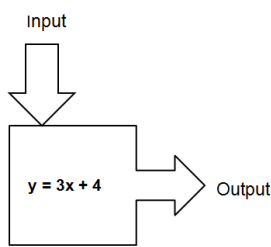
Input	Output
x	y
1	
2	
3	

$y = 3x + 4$

Input

$y = 3x + 4$

Output



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□ Another way to write the function  $y = 3x + 4$  is \_\_\_\_\_

□ A function is in \_\_\_\_\_ when you use  $f(x)$  to indicate the outputs.

□  $f(x)$  is read as \_\_\_\_\_

□ Also may see \_\_\_\_\_ and \_\_\_\_\_

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**Evaluating a Function Rule**

□ Evaluate  $f(n) = -3n - 10$  for  $n = 6$

□ Evaluate  $y = -2x^2 + 7$  for  $x = -4$

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**Evaluating a Function Rule**

□ Evaluate the function rule for  $x = 2$

□ Evaluate the function rule for  $x = 2$

□  $y = 2x + 1$

□  $f(x) = x^2 - 4$

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## Day 2 relationsandfunctions

- Finding the Range
  - Evaluate the function rule  $f(a) = -3a + 5$  to find the range of the function for the domain  $\{-3, 1, 4\}$

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- Find the range of each function for the domain  $\{-2, 0, 5\}$ 
  - $f(x) = -4x$

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