

Name _____

Date _____

Relations as Functions - Guided Lesson Explanation**Explanation#1**

A relation is a function if each number in the domain is paired with exactly one number in the range.

Look at the domain values in the table:

Domain	Range
-11	1
5	11
5	1

The domain value 5 is paired with multiple range values, so the relation is not a function.

Explanation#2

You can use the **vertical line test** on a graph to determine whether a relation is a function.

If it is impossible to draw a vertical line that intersects the graph more than once, then each x -value is paired with exactly one y -value. So, the relation is a function.

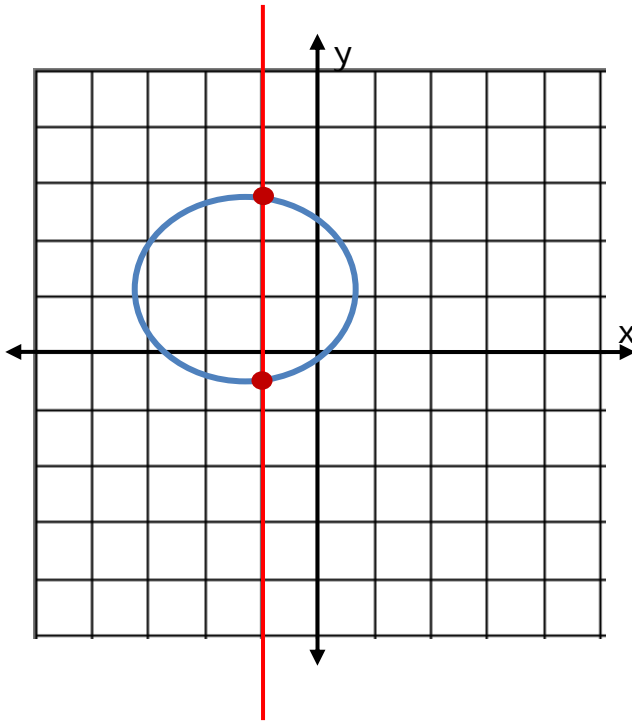
If it is possible to draw a vertical line that intersects the graph more than once, then there is an x -value that is paired with more than one y -value. So, the relation is not a function.



Name _____

Date _____

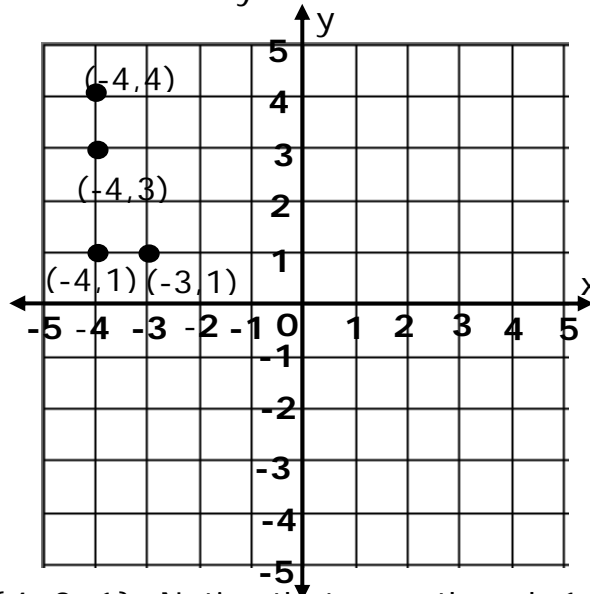
Apply the vertical line test:



The vertical red line intersects the graph in two places, so the relation is not a function.

Explanation#3

The range of a relation is the set of y-coordinates. To find the range, find the y-coordinates.



The range is the set $\{4, 3, 1\}$. Notice that even though 1 is the y-coordinate of more than one point, it only needs to be listed once.

