

# 1.6 Formalizing Relations and Functions

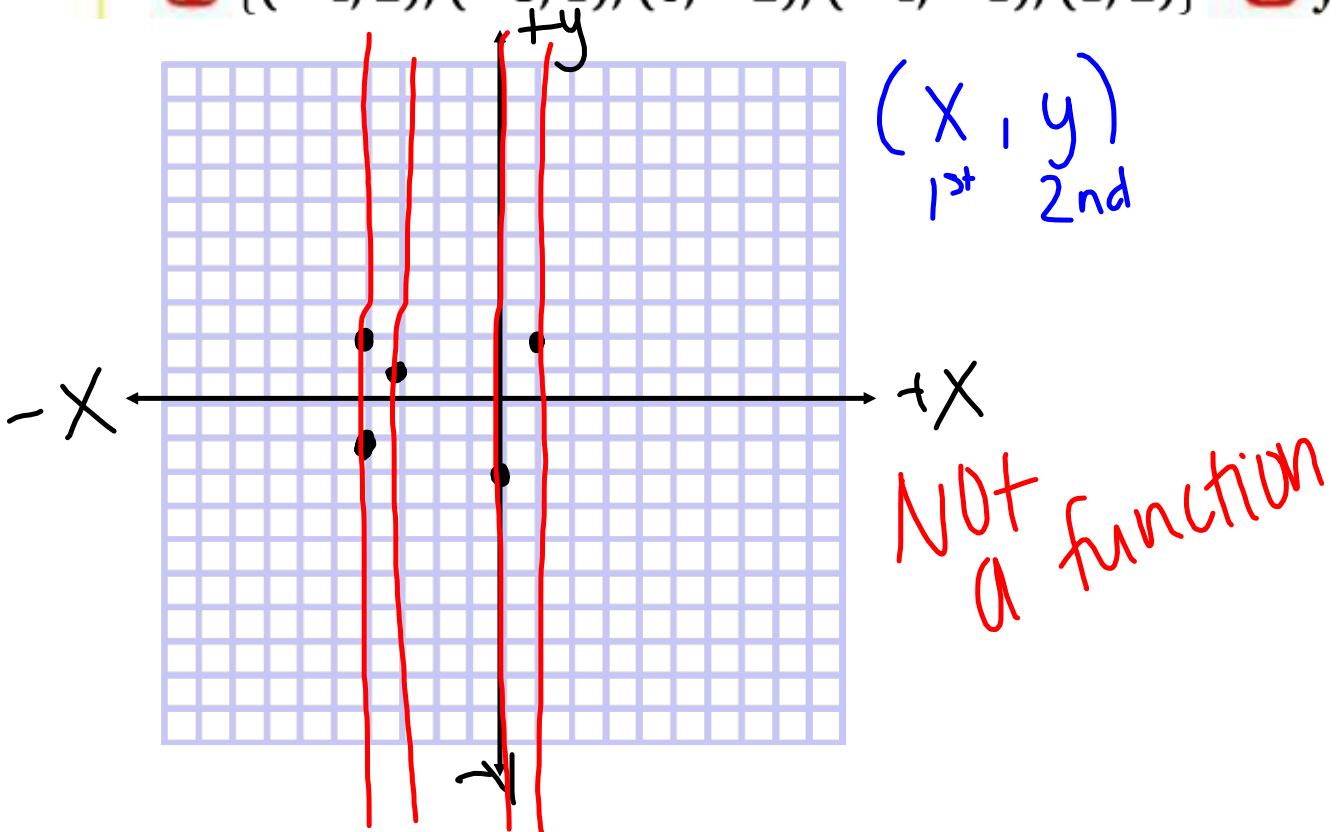
## Vertical Line Test:

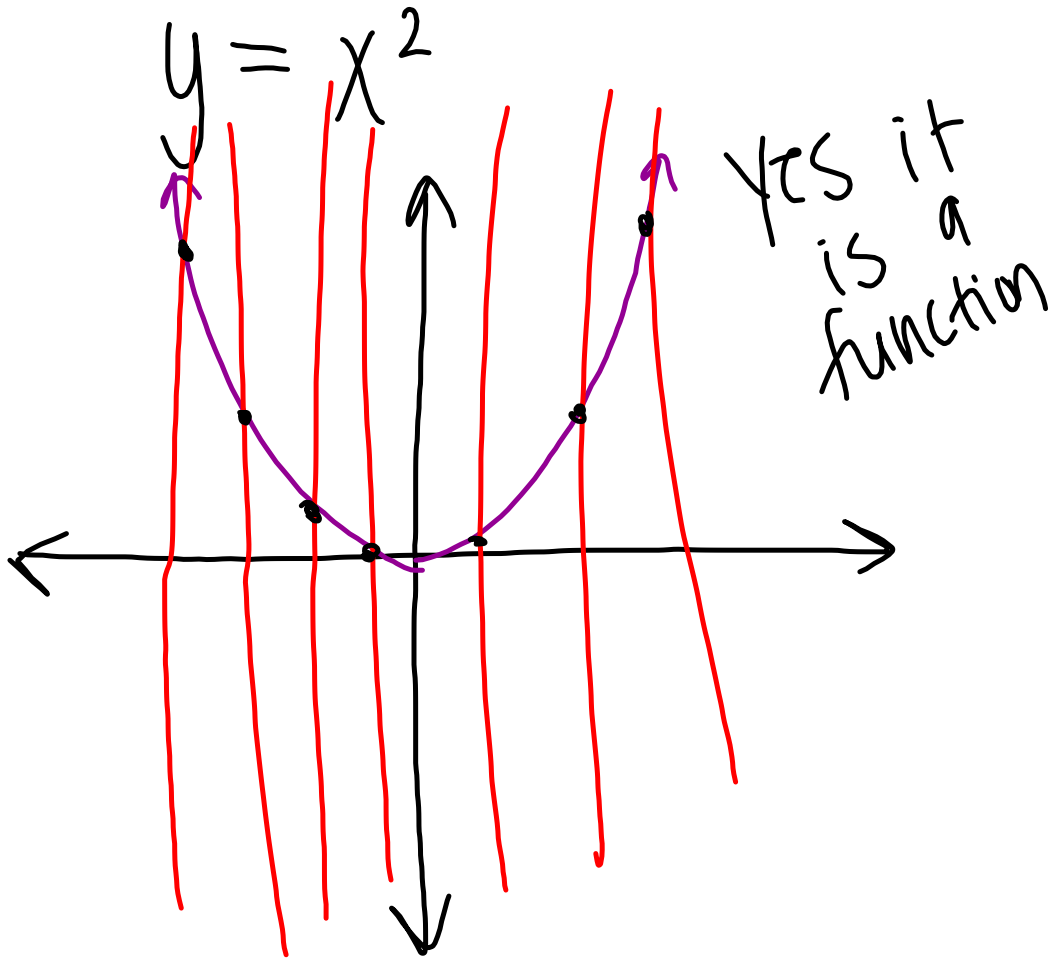
Straight vertical line  
if two points hit it at the  
same time, it is NOT a function

**Problem 2** Identifying Functions Using the Vertical Line Test

Is the relation a function? Use the vertical line test.

**A**  $\{(-4, 2), (-3, 1), (0, -2), (-4, -1), (1, 2)\}$  **B**  $\{(1, 2), (2, 1), (3, 2), (4, 3), (5, 4)\}$





1-6  
yesterday #1-4  
#5-6  
#7-8

# Function Notation:

$$y = -3x + 1$$

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

Same:

$$-3x + 1$$

Different:

$$y \neq f(x)$$

f of x

"function of x"

$$f(x) = x$$


$$g(x) = f(x) + 3$$

$$g(x) = x + 3$$

replace  
w/ the  
function

**Problem 3** Evaluating a Function

**Reading** The function  $w(x) = 250x$  represents the number of words  $w(x)$  you can read in  $x$  minutes. How many words can you read in **8 min?**

$$w(8) = 250x$$


$$w(8) = 250(8)$$

$$w(8) = 2000 \text{ words}$$

$$f(x) = -1.5x + 4 \quad D: \{1, 2, 3, 4\}$$

Find the range using  
the given domain.

Domain:  $x$

Range:  $y$

D	WORK $-1.5x + 4$	R
1	$-1.5(1) + 4$	2.5
2	$-1.5(2) + 4$	1
3	$-1.5(3) + 4$	-0.5
4	$-1.5(4) + 4$	-2

$$R: \{2.5, 1, -0.5, -2\}$$



1 thing you need help with from to-day.

2.  $f(x) = 3x + 1$

when  $x = 4$

What is your answer

$$\#10. \quad X^3 = (2)^3 \quad \#9-12$$

$$2 \cdot 2 \cdot 2$$

$$(-1)^3$$

↖ in a  
calculator