Function Notation

1. Evaluate the following expressions given the functions below:

$g(x) = -3x + 1$ $\quad f(x) = x^2 + 7$ $\quad h(x) = \frac{12}{x}$ $\quad j(x) = 2x + 9$

a. $g(10) =$

b. $f(3) =$

c. $h(-2) =$

d. $j(7) =$

e. $h(a)$

f. $g(b+c)$

Key

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$(x, g(x))$
(x, y)
$(10, -29)$

a. $g(10) =$ $g(x) = -3x+1 \Rightarrow g(10) = -3(10)+1$
$-30+1$
-29
$g(10) = -29$

b. $f(3) =$ $f(3) = (3)^2 + 7$
$9 + 7$
16
$f(3) = 16$

c. $h(-2) =$ $h(-2) = \frac{12}{-2} = -6$ $\quad h(-2) = -6$

d. $j(7) =$ $j(7) = 2(7)+9$
$14 + 9$
$j(7) = 23$

e. $h(a)$ $\quad h(a) = \frac{12}{a}$

f. $g(b+c)$ $\quad g(b+c) = -3(b+c)+1$
$g(b+c) = -3b + -3c + 1$

① What is a function and I can graph various "functions"

↳ some equation/graph are functions

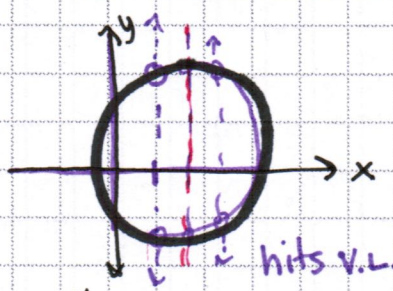
Relation - ALL equations / ALL graphs

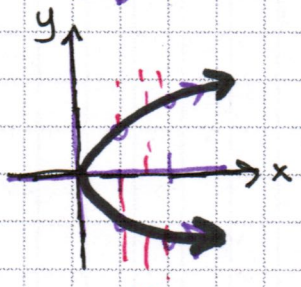
relations
functions

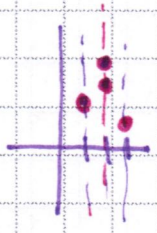
function → for every x there is exactly one y...

VLT → imagine drawing VL if only touches graph once then graph is function.

relations but NOT FUNCTION







x's

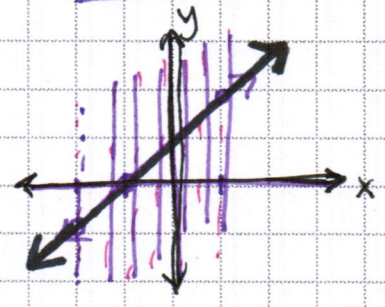
(1,2) (2,3) (2,4) (3,1)

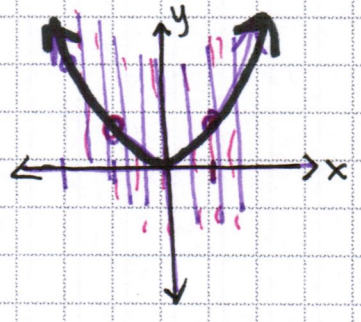
b/c we have 2 x-values that are same w. th diff y values not function

It's ok to have same y-values

vs.

FUNCTIONS





(1,2) (3,2) (5,3) (4,6)

To test if a function exists use vertical line Test

All different x-values so it's a function