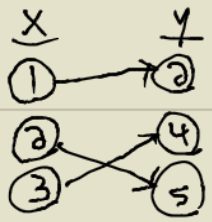
FUNCTION: FOR EVERY X THERE IS ONLY ONE Y

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

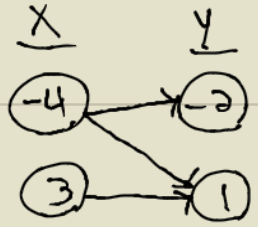


FUNC.

D: 1, 2, 3

R: 2, 4, 5

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



NOT A FUNCTION

D: -4, 3

R: -2, 1

#3 $\{(8,3),(5,3),(3,3)\}$

FUNCTION

D: 3, 5, 8

R: 3

EASIER DEF (95% of)

IF YOU HAVE ANY OF THE FOLLOWING IT IS NOT A FUNCTION

y^2, y^4, y EVEN POWER

$|y|, \pm\sqrt{x}, \pm x$

X = NUMBER

#4 $y = 2x+1$ FUNC.

#5 $5x+2y=7$ FUNC.

#6 $y = \pm 3x$ NOT A FUNC.

#7 $y = x^5 - 1$ FUNC.

ex: $y^5 - y + x^2 - \sqrt{x} = 3$

x=1
x=2
x=3

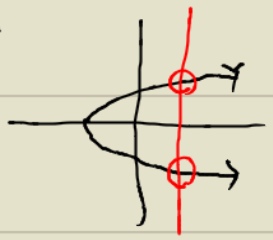
FUNCTION

#8 $y^2 = x+1$ NOT A FUNC.

VERTICAL LINE TEST

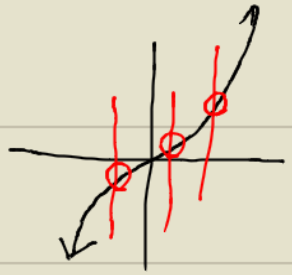
IF ANY VERTICAL LINE INTERSECTS THE GRAPH AT 2 OR MORE PLACES IT IS NOT A FUNCTION

#9



NOT A FUNCTION

#10



FUNCTION

FUNCTION NOTATION

THE WOMAN WITH RED HAIR WITH A PINK SHIRT AND JEANS

JANE

$y = 5x-1$

$f(x) = 5x-1$

f of x

f

$y = 7x+2$

$g(x) = 7x+2$

g of x

g

ex: EVALUATE $y = 3x-1$ FOR Y WHEN X IS EQUAL TO 2

$y = 3x-1$

$y = 3(2)-1$

$y = 6-1$

$y = 5$

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

$f(2) = ?$

$f(2) = 3(2)-1$

$= 6-1$

$= 5$