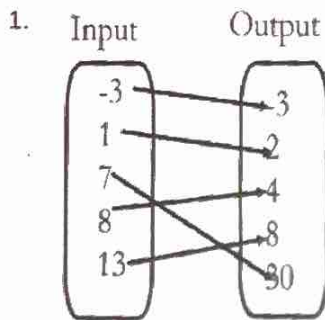


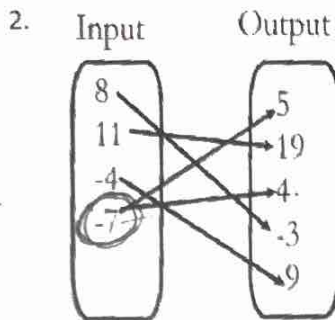
Is it a Function Warm Up/Notes

* tables: cannot have doubling in x's!

For the following problems decide whether the equations are functions or not? State the domain for #5 & #6.



Yes



No b/c -7

3.

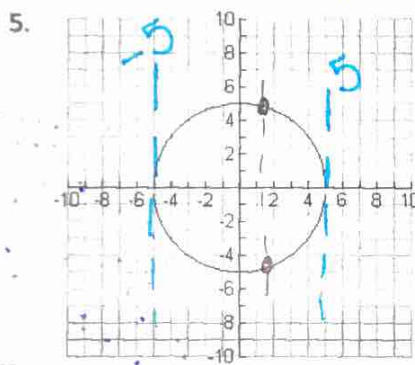
X	Y
-3	7
-2	5
-1	6
3	7
4	9

yes

4.

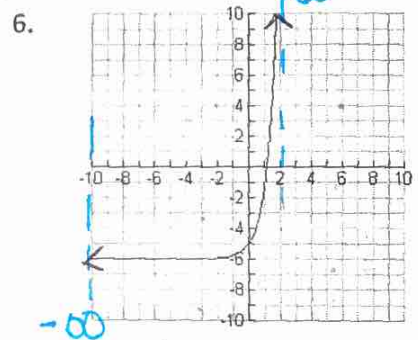
X	Y
-1	6
0	-5
-2	7
-1	9
5	-3

no



no

D: [-5, 5]



yes

D: (-∞, ∞)

VLT

hint for the next 3 solve for y alone 1st

7. $2x - y = 5$ line
 $-y = 5 - 2x$
 $y = -5 + 2x$
 yes!

8. $x^2 + y^2 = 19$ circle
 $y^2 = 19 - x^2$
 $y = \pm \sqrt{19 - x^2}$
 no!

9. $4x^2 + 2y = 16$ parabola
 $2y = 16 - 4x^2$
 $y = 8 - 2x^2$
 yes!

[] → closed circle, through
 () → arrows, open circle

If ± then it's not a function

Function Notation

Notation Notes

$f(x) \sim y$
 $f(x)$ is the same as y .

$f(-7)$
 \uparrow
 $x = -7$
 $y ?$

$f(x) = 0$
 $x ?$
 $y = 0$

Ex. 1: Use $f(x) = 5x - 1$ and $g(x) = 4x^2 + 3$ for the following questions

1. $g(5) = 4(5)^2 + 3$
 $= 100 + 3 = \boxed{103}$

2. $f(-3) = 5(-3) - 1$
 $= -15 - 1 = \boxed{-16}$

3. x when $f(x) = 0$

$$0 = 5x - 1$$

$$1 = 5x$$

$$\boxed{\frac{1}{5} = x}$$

4. x when $g(x) = 0$

$$0 = 4x^2 + 3$$

$$-3 = 4x^2$$

$$-\frac{3}{4} = x^2$$

$$\pm \frac{\sqrt{-3}}{\sqrt{4}} = x$$

$$\boxed{\pm \frac{i\sqrt{3}}{2} = x}$$

Ex. 2: $f(x) =$

$\begin{cases} 3x-1 & x \leq -2 \\ x^2 & -2 < x < 4 \\ 5 & x \geq 4 \end{cases}$

domain

1. $f(-10) = 3(-10) - 1$
 \uparrow
 $x = -10 \quad = -30 - 1 = \boxed{-31}$

2. $f(-1) = (-1)^2 = \boxed{1}$

3. $f(1) = 5$

4. $f(-2) = 3(-2) - 1$
 $= -6 - 1$
 $= \boxed{-7}$