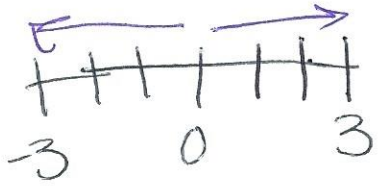
Deisy Gonzales
Math 2311
Tue 1/29/19
pg 1

Absolute Value- the distance away from 0.

ex $|3| = 3$
$|-3| = 3$



ex $|x| = 7$

$x = 7$ or $x = -7$

ex $2|x-4|+1 = 7$

$2|x-4| = 6$

$|x-4| = 3$

$x-4 = 3$ or $x-4 = -3$

$x = 7$ or $x = 1$

ex $|x+2| = -5$

no solution — it is suppose to be distance (Positive)

Section 1.2 Circles- are only relations not functions

- Equation of a circle in standard form

$(x \boxed{-h})^2 + (y \boxed{-k})^2 = r^2$

opposites

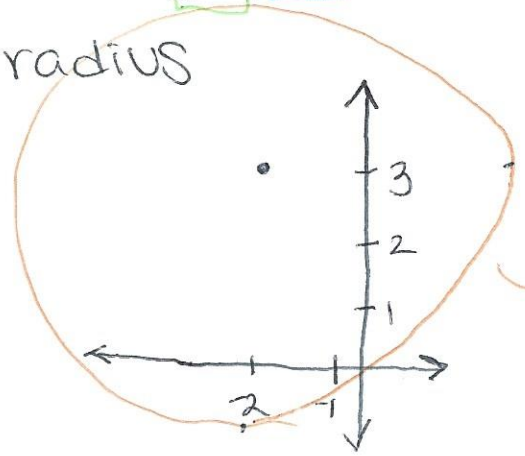
center $(\boxed{h}, \boxed{k})$ opposites

r-radius

ex $(x+2)^2 + (y-3)^2 = 16$

Center $(-2, 3)$

radius $= \boxed{4} = \sqrt{16}$



ex Center $(1,-5)$ Diameter 14

$r = \frac{14}{2} = 7$

$(x-1)^2 + (y+5)^2 = 7^2$

$$\boxed{(x-1)^2 + (y+5)^2 = 49}$$

ex Write the equation of this circle in standard form.

$$x^2 + y^2 - 10x + 6y - 7 = 0$$

$$x^2 + y^2 - 10x + 6y = 7$$

$$(x^2 - 10x) + (y^2 + 6y) = 7$$

- Complete the square for both

$$(x^2 - 10x + 25) + (y^2 + 6y + 9) = 7 + 25 + 9$$

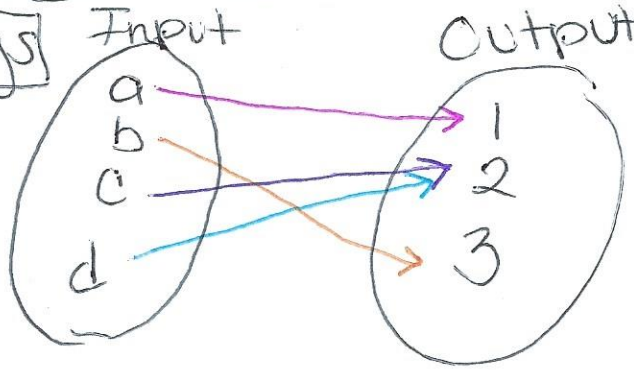
$$\boxed{(x-5)^2 + (y+3)^2 = 41}$$

Section 1.3 Functions vs Relations

- Relation - relates values
- Function - A relation for every x value there is only one y-value.

Representations of functions

Mappings



no x repeats (function)

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Table

X	y
1	5
2	6
3	7
1	5
2	8

(1,5) is okay because it repeats the same exact something.

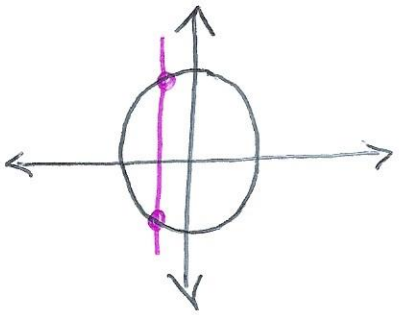
This is not a function because the input 2 has two y's.

Coordinates

(2,3) (5,-7) (6,4) (2,-3)

not a function

Graph



Vertical line Test

Draw a vertical line, if it crosses more than 1 point it is not a function.

Equation

Determine if y is a function of x. Solve for y and determine how many y-values for each x-value.

$2x-3y=7$

$-3y=7-2x$

$y=-\frac{7}{3}+\frac{2}{3}x$

This is linear and its a function

ex $x + y^2 = 7$

$y^2 = 7 - x$

$y = \pm\sqrt{7-x}$ not a function because Y will have 2 different answers for every x.

$y = \sqrt{7-x}$ $y = -\sqrt{7-x}$

ex $|y| = x$

$y = -x$ or $y = \pm x$ not a function
$y = x$