

Bellwork 8-27-15

Solve the following equation.

$$3 - 2|4x - 1| = -5$$

2, 9, 13, 12

$$\begin{aligned} 2 - 5| -3 - 6k | &= -43 \\ \frac{-5| -3 - 6k |}{-5} &= \frac{-43}{-5} \\ | -3 - 6k | &= \frac{43}{5} \\ | -3 - 6k | &= 9 \end{aligned}$$

$$\begin{aligned} -3 - 6k &= 9 & -3 - 6k &= -9 \\ +3 & & +3 & \\ \hline -6k &= 12 & -6k &= -6 \\ \frac{-6k}{-6} &= \frac{12}{-6} & \frac{-6k}{-6} &= \frac{-6}{-6} \\ k &= -2 & k &= 1 \end{aligned}$$

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1.6 Relations and Functions

What is a relation?

A relation is just a pairing of input values (x) with output values (y).

Examples: (You do not have to write these...)

First Class Stamp Rates

Year	1900	1920	1940	1960	1980	2000
Rate (cents)	2	2	3	4	15	33

(Note: In the original image, green 'x' and 'y' labels are placed next to the table headers.)

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Domain & Range of a Relation

Domain = input/independent values (x-values)

Range = output/dependent values (y-values)

Domain & Range of a Table

Year	1900	1920	1940	1960	1980	2000
Rate (cents)	2	2	3	4	15	33

X	Y
-3	-32
-1	0
0	2
7	8
12	5
42	2

Domain: $\{1900, 1920, 1940, 1960, 1980, 2000\}$

Range: $\{2, 3, 4, 15, 33\}$

Domain: $\{-3, -1, 0, 7, 12, 42\}$

Range: $\{-32, 0, 2, 8, 5\}$

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Domain and Range of a Mapping

Domain: $\{5, 6, 2\}$

Range: $\{8, 9, 11, 12\}$

Domain and Range of Set of Points

$(8, 2), (7, 3), (9, 8)$

Domain: $\{8, 7, 9\}$

Range: $\{2, 3, 8\}$

Domain:

Range:

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Names Heights

All x values must occur
ONCE

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What is a function?

In a function, there is only 1 output (y) for every input (x).
You cannot have an x-value repeated.

Is it a function?

x	8	7	9
y	2	3	8

Function

Not a function

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Is it a function? If yes, find the domain and range.

Player	Irene	Anna	Kate	Leah
Points	22	12	12	16

Function

x	8	7	9	7
y	2	3	8	-1

Not

{ (100, 5), (120, 5), (140, 6), (160, 6), (180, 12) }

Function

Function

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Determine whether each relation is a function.

- items in a store to prices on a certain date.

Shoe — \$
Function

- from types of fruits to their colors.

Apple { green, red, yellow } NOT

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Exception

If an x-value is repeated, but it has the same y-value both times, it can still be a function.

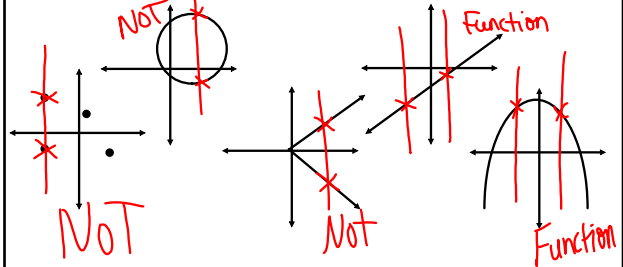
x	8	7	9	7
y	2	-1	8	-1

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Vertical Line Test

If you're given a graph, use the vertical line test to determine whether the graph is a function or not.

Decide if the given graphs are functions?



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Conclusion

1. What is domain?
2. What is range?
3. How do you determine whether you have a function?
4. Questions???

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Math Humor: Why did the relation need a math tutor?

Because he failed the vertical line test.



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Assignment:
Pg 47: 9-16, 18, 22-26even, 29, 44-46

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