

Standard 3

- 3.1 Students will be able to determine if a graph represents a function
- 3.2 Students will be able to determine if a table of values represents a function
- 3.3 Students will be able to determine if a graph is linear or non-linear
- 3.4 Students will be able to determine if a table of values is linear or nonlinear
- 3.5 Students will be able to use tables of values and extend the pattern

Graphing Review

Things to remember...

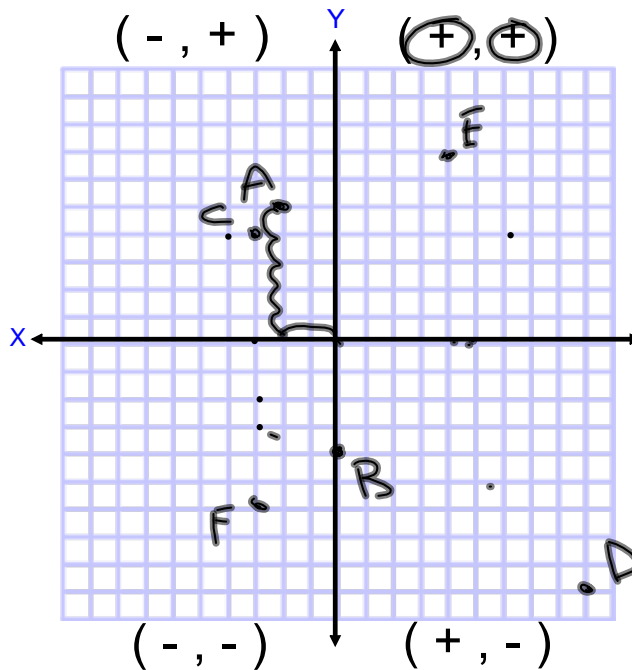
Points are graphed (x, y)

Each quadrant represents a different set of graphing points

Let's graph: A: (-2, 5) B: (0, -4)

Graph the following coordinate points:

- C: (-3, 4)
- D: (9, -9)
- E: (4, 7)
- F: (-3, -6)

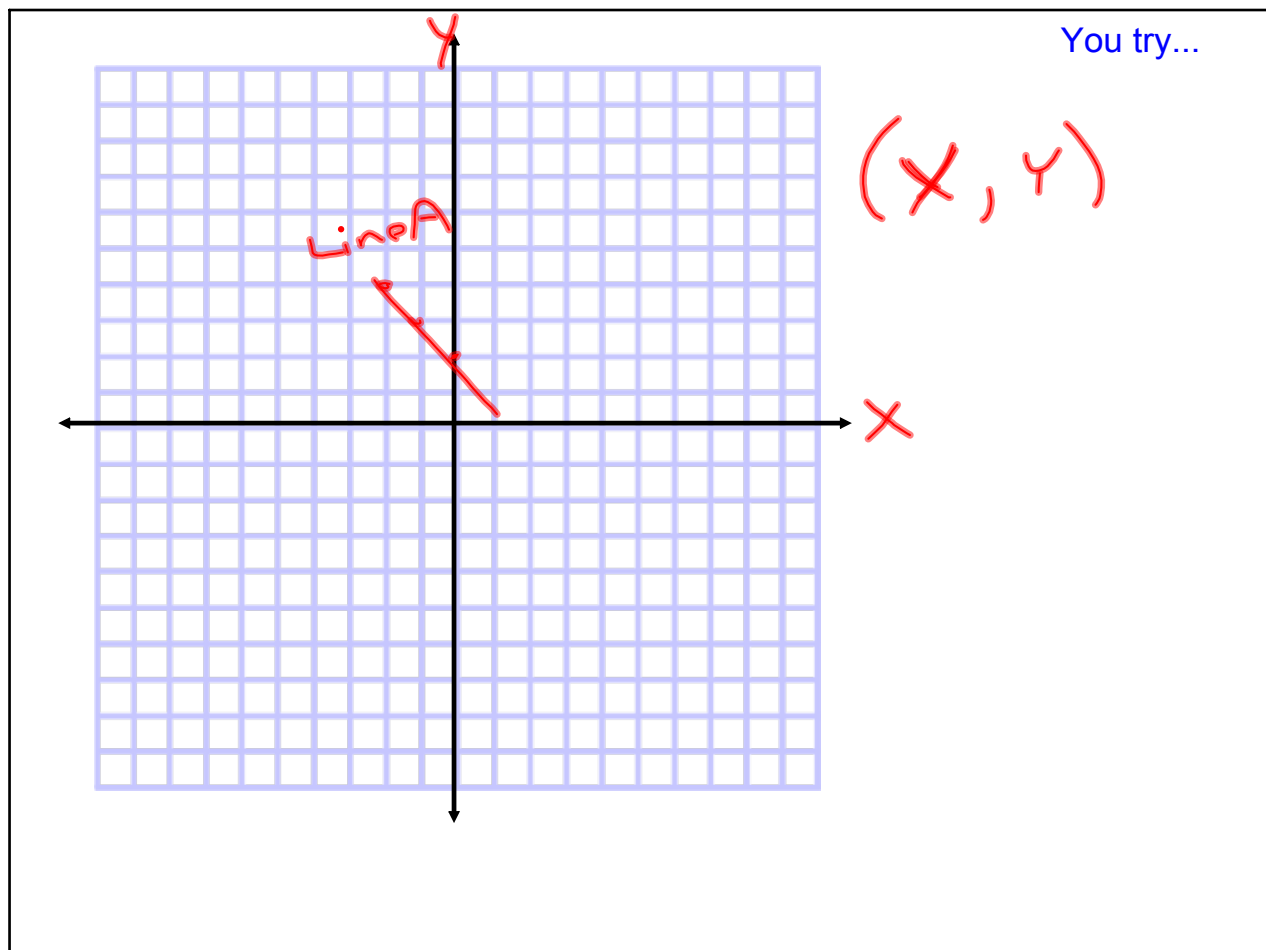


Line A

X	y
-4	5
-3	4
-2	3
-1	2
0	1
1	0
2	-1
3	-2
4	-3

Line B

x	y
-6	-9
-4	-5
-2	-1
<u>0</u>	3
2	7
4	10



Standard 3: 3.1 & 3.2 - Function vs Relation
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Relation - a relationship between 2 sets of information

EXAMPLE: the pairing of names and heights

Height (x) <i>Domain</i>	Name (y) <i>Range</i>
5' 7"	Jake
5' 2"	MaKayla
5' 8"	LOGAN
5' 8"	Chris

Function - a well behaved relation; given an "X", we get only one "Y"

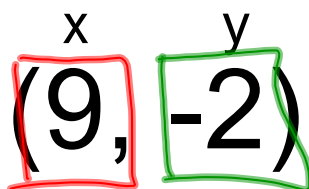
EXAMPLE: people attending and admission price to a movie

^X # of People (x) <i>Domain</i>	^Y Cost of admission (y) <i>Range</i>	\$ 8
1	8	
2	16	
3	24	
4	32	
5	40	

Domain & Range

Domain = "X" Values

Range "Y" Values



Set of coordinate points: (2, 4), (5, -2), (9, 1), (21, -3), (4, 18), (5, 1)

Domain: {2, 5, 9, 21, 4}

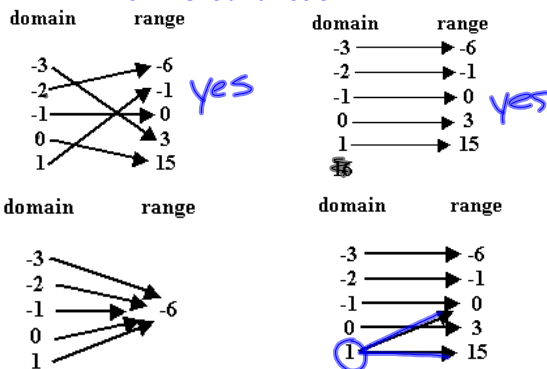
Range: {4, -2, 1, -3, 18}

Set of coordinate points: (-7, 2), (9, 10), (5, 2), (8, 1), (-7, 3)

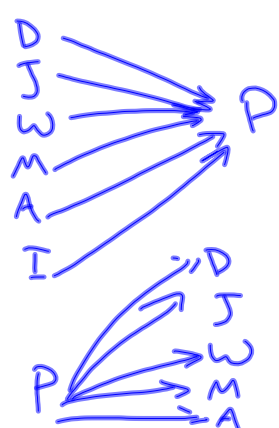
Domain: {-7, 9, 5, 8}

Range: {2, 10, 1, 3}

3.2: Is it a function???

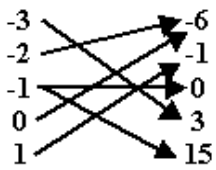


Domain Range



YOU TRY...

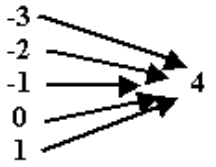
domain range



FUNCTION

NOT A FUNCTION

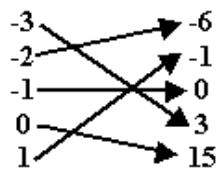
domain range



FUNCTION

NOT A FUNCTION

domain range

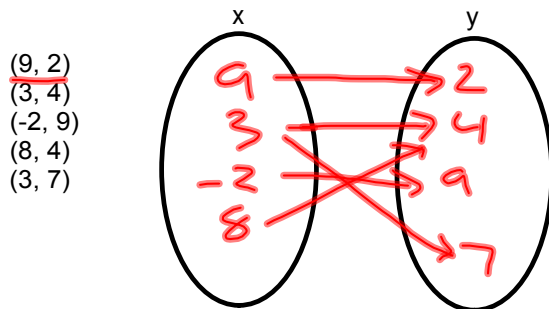


FUNCTION

NOT A FUNCTION

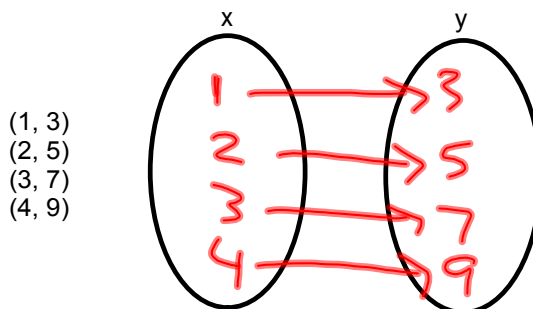
TS: _____

Create a mapping diagram...



FUNCTION

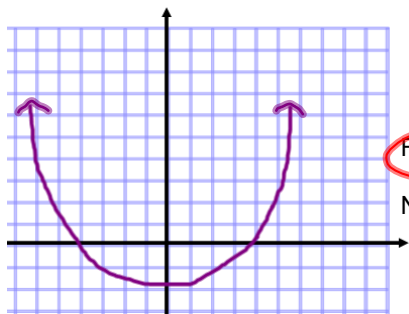
NOT A FUNCTION



FUNCTION

NOT A FUNCTION

What if you're given a graph? How do we determine if it's a function?



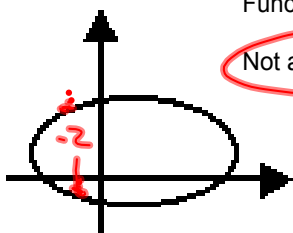
Function

Not a Function

Vertical Line Test

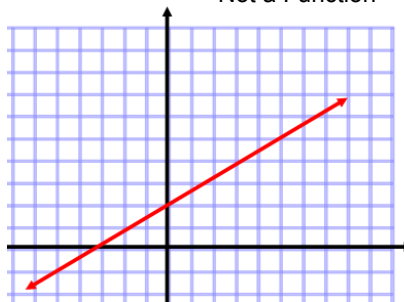
Function

Not a Function

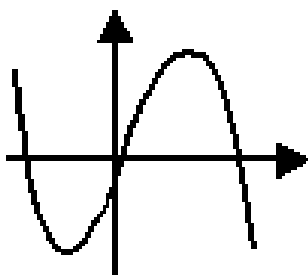


Function

Not a Function

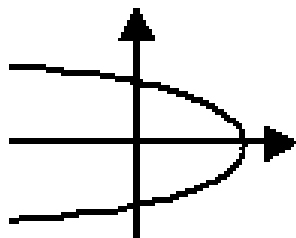


You try...



FUNCTION

NOT A FUNCTION

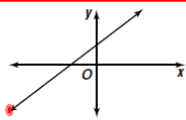
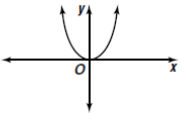
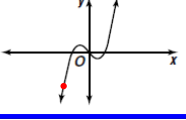


FUNCTION

NOT A FUNCTION

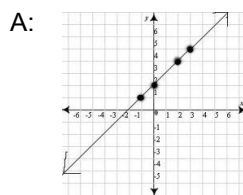
TS: _____

Linear Functions vs. Nonlinear Functions

Function	Equation	Graph
Linear	$y = mx + b$	
Quadratic	$y = ax^2 + bx + c, a \neq 0$	
Cubic	$y = ax^3 + bx^2 + cx + d, a \neq 0$	

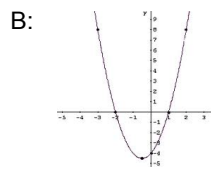
Linear Function

Non-Linear Functions



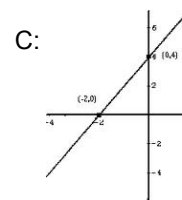
Linear

Non-Linear



Linear

Non-Linear



Linear

Non-Linear

1) For the following relation to be a function, X cannot be what values?

$\{(12, 13), (-11, 22), (33, 101), (X, 22)\}$



2) Give 2 different values for X that would make the following relation, a function.

$\{(12, 14), (13, 5), (-2, 7), (X, 13)\}$



3) Give 2 different values for X that would make the following relation, NOT a function.

$\{(13, 14), (12, 5), (16, 7), (X, 14)\}$

