

January 26, 2015

$N ? \{x \in N \mid x \leq 8\}$

$a \cap b$ and \rightarrow Intersection

$a \cap b = \{x \in N \mid x \leq 8\}$

$= \{x \in \mathbb{Z} \mid 1 \leq x \leq 8\}$

$[1, 8]$

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Functions

Relation \rightarrow ordered pairs

$D = \left\{ \begin{pmatrix} x & y \\ 2 & 3 \\ 4 & 5 \\ 6 & 7 \end{pmatrix} \right\}$

a Function \rightarrow will relate, map, connect a 1st entry (x) to a specific 2nd entry (y).

map of D

$x \rightarrow$	y	
2	\rightarrow	3
4	\rightarrow	5
6	\rightarrow	7

a function \downarrow
 $x+1$

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x	y	
2	\rightarrow	5
3	\rightarrow	5
4	\rightarrow	5

yes, a function
 \downarrow
 $x = 5$

2	\rightarrow	5
	\rightarrow	7
	\rightarrow	9

* not a function

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Test for a function

① when you have ordered pairs

* Are there repeated Xs?

yes \downarrow function
no \downarrow function

Is the X mapped to some y?

yes \downarrow function
no \downarrow not a function

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$(8, -1), (4, 4), (8, 5)$

function: yes or no?

$(8, -1), (4, 4), (8, -1)$

yes, a function

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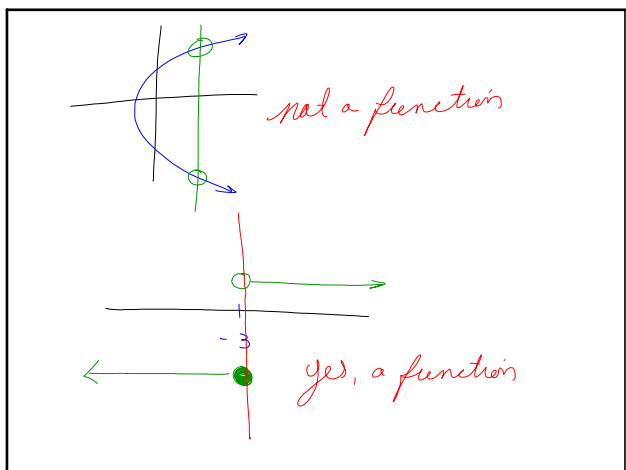
Test

② Vertical Line Test

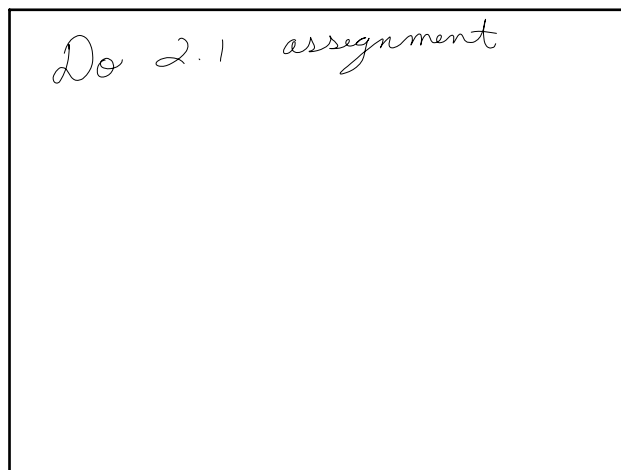
* when you have a graph

a function!

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