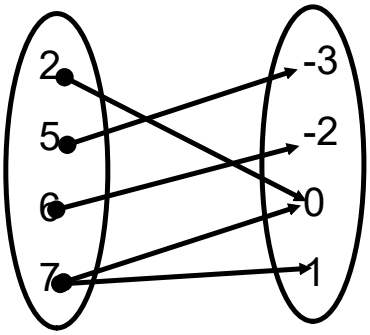
Warm Up

Apr. 16, 2019



1) Given the following arrow diagram

a) State the domain $\{2, 5, 6, 7\}$

b) State the range $\{-3, -2, 0, 1\}$

c) Is this a function or not? How do you know?

Not a function since $x = 7$ is repeated

2) Given the following set {(1,3), (2, 6), (-1, 8) , (5, 7), (-2, 4)}

a) State the domain $\{-2, -1, 1, 2, 5\}$

b) State the range $\{3, 4, 6, 7, 8\}$

c) Is this a function or not? How do you know?

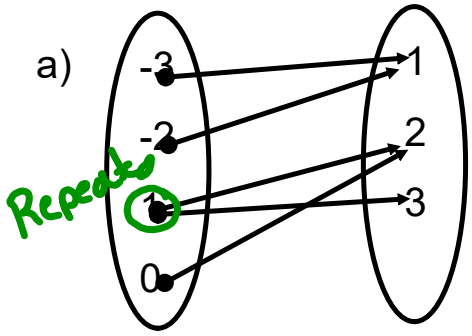
No x-value repeated so this is a function.

Homework Questions

pg 270 #4,5,8 Pg 294 #4a,b, 7

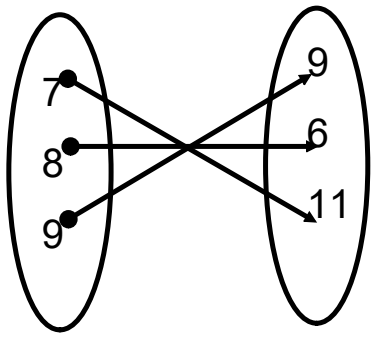
State which of the following relations are functions. Explain your answers.

a)



$x = 1$ is repeated
So Not a function

b)



x is Not repeated
So a function

c)

x	y
10	2
11	2
12	2
12	2

Repeat of x

So Not a function

Hint -graph it if you are unsure

d)

x	y
-5	3
-3	4
1	7
1	8
2	4

Repeat
Not Function

Discrete and Continuos Data

Discrete Data (Dots)

- points are not joined together with a line on the graph.

-A finite number of values exist between points

- hint ask yourself can you have part of a "x" value. If no then discrete

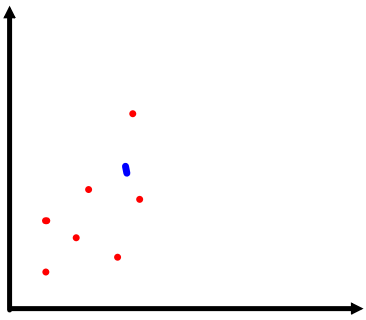
Continuous Data

- points **are** joined together with a line on the graph.

-A infinite number of values exist between points

- hint ask yourself can you have part of a "x" value. If yes then continuous

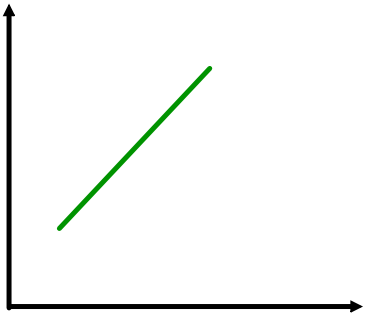
Examples)



Discrete

with dots then

$x \in W$, $x \in I$, $x \in N$ } $y \in W$, $y \in I$, $y \in N$



Continuous

with line

$x \in R$

$y \in R$

Linear & Non-Linear

(One Single)

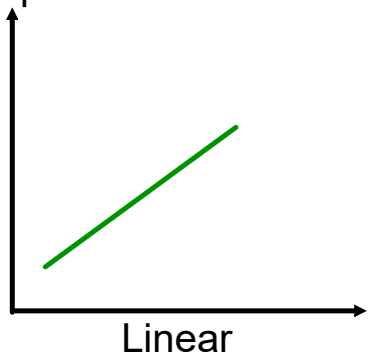
Linear graphs - the data is a straight line

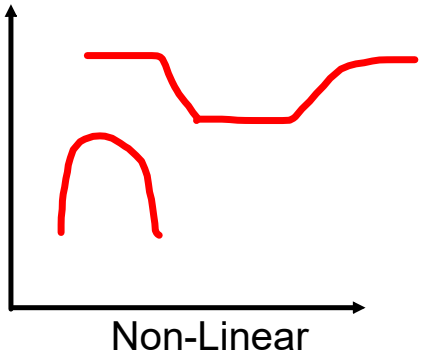
(Doesn't have to be connected)

Non-Linear graphs - the data is NOT a straight line

- It can curve or spread out with no real pattern.

Examples

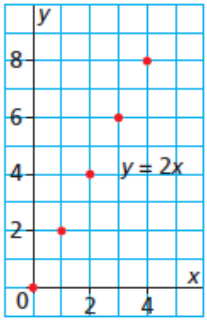




Using the graph write the domain and range.

$\{(0,0), (1,2), (2,4), (3,6), (4,8)\}$

Use two ways to represent both



Discrete

Method 1

Domain: $\{0, 1, 2, 3, 4\}$

Range: $\{0, 2, 4, 6, 8\}$

Method 2

Domain: $\{x \mid 0 \le x \le 4, x \in I\}$

Range: $\{y \mid 0 \le y \le 8, y \in I\}$

Is this graph linear or non-linear?

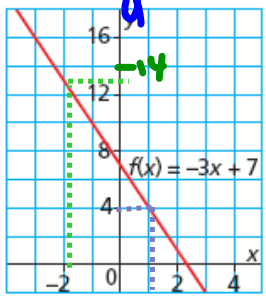
Is this graph continuous or discrete?

Example 4 Determining Domain Values and Range Values from the Graph of a Function

Here is a graph of the function $f(x) = -3x + 7$.

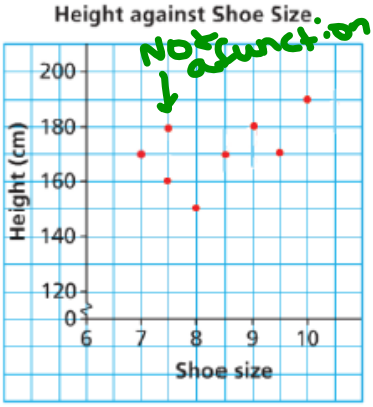
a) Determine the range value when the domain value is -2.

b) Determine the domain value when the range value is 4.



SOLUTION

CHECK YOUR UNDERSTANDING



x=7.5 repeated

a) State the domain & range.

b) Is this relation a function?

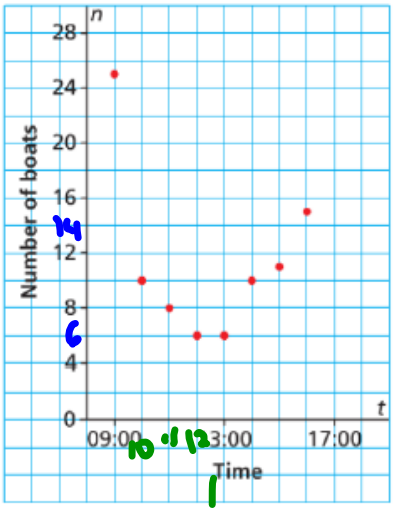
c) Why are the points not connected? Explain.

Discrete b/c You cannot have 1/4 or fraction part of shoe size.

a) {7, 7.5, 8, 8.5, 9, 9.5, 10} Domain

Range {150, 160, 170, 180, 190}

Number of Fishing Boats Anchored in an Inlet



Domain $\{9, 10, 11, 12, 13, 14, 15, 16\}$

$\{x \mid 9 \le x \le 16, x \in I\}$

a) State the domain & range.

Range $\{6, 8, 10, 13, 15, 25\}$

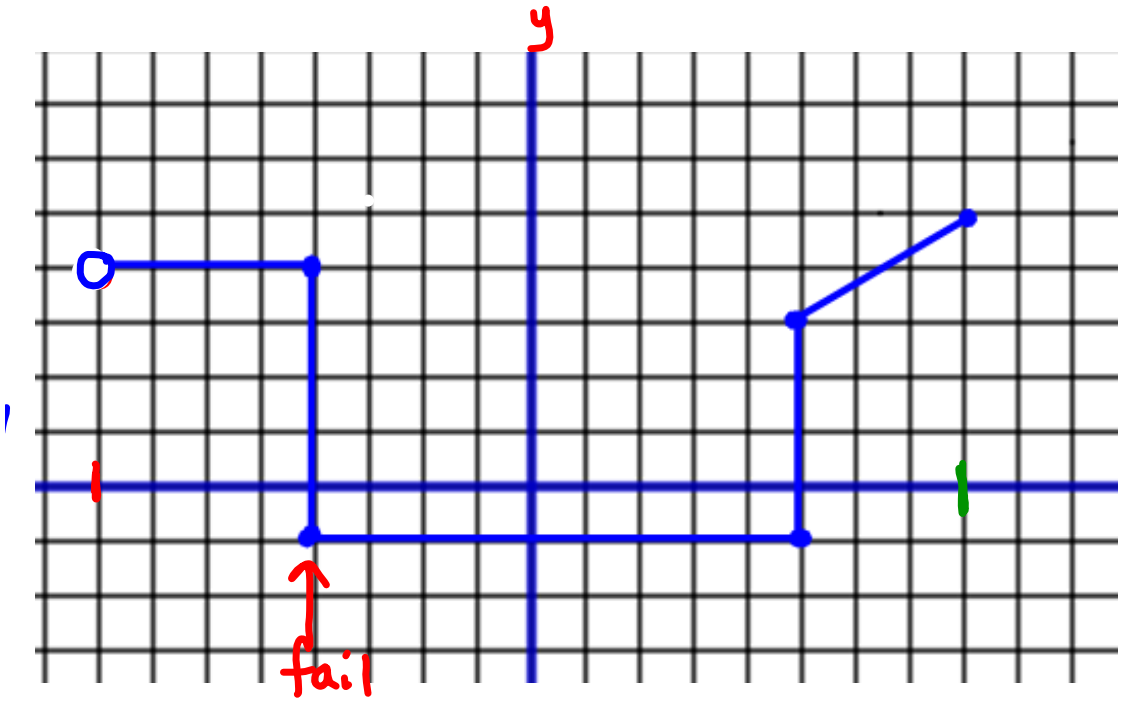
b) Is this relation a function

Function No repeats in x

$\{y \mid 6 \le y \le 25, y \in I\}$

c) Why are the points not connected? Explain

→ can't have fraction of boat anchored at a time (it is either there or it is away)



Discrete/ Continuous:

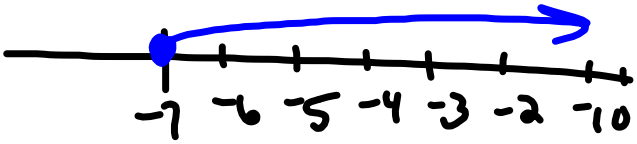
Function/ Non-Functions

Domain & Range $\{x \mid -8 < x \leq 8, x \in R\}$

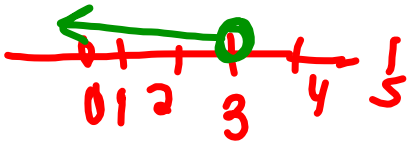
Linear or Non-linear $\{y \mid -1 \leq y \leq 5, y \in R\}$

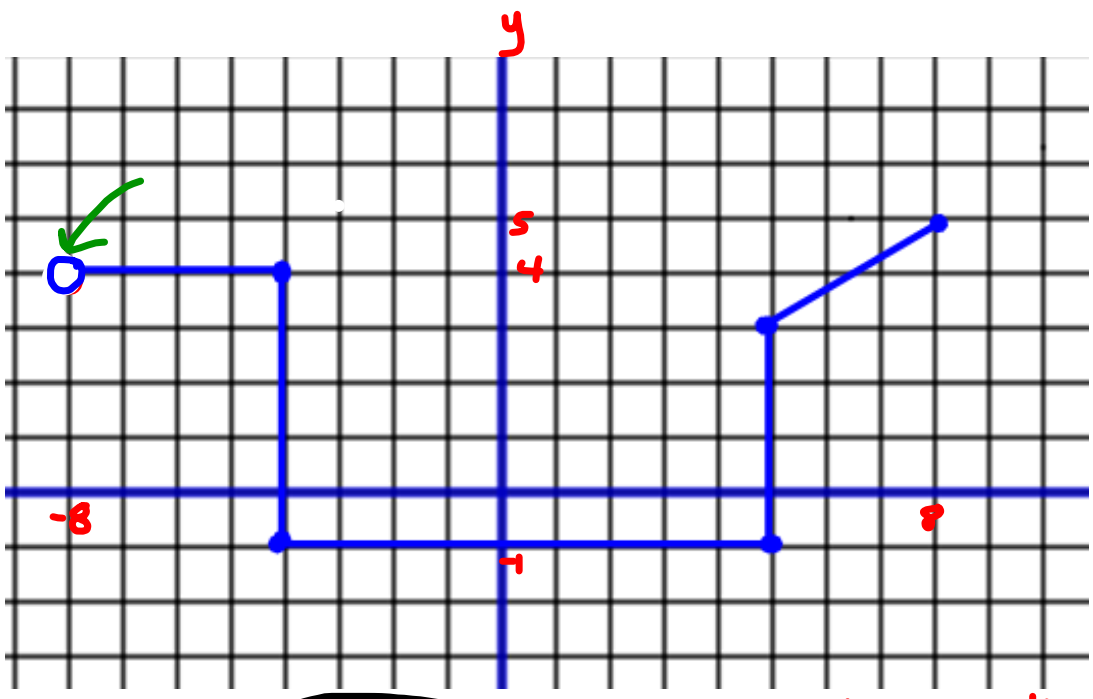
Review of gr 9.

$x \geq -7$



$x < 3$





Non - linear

Discrete/ Continuous:

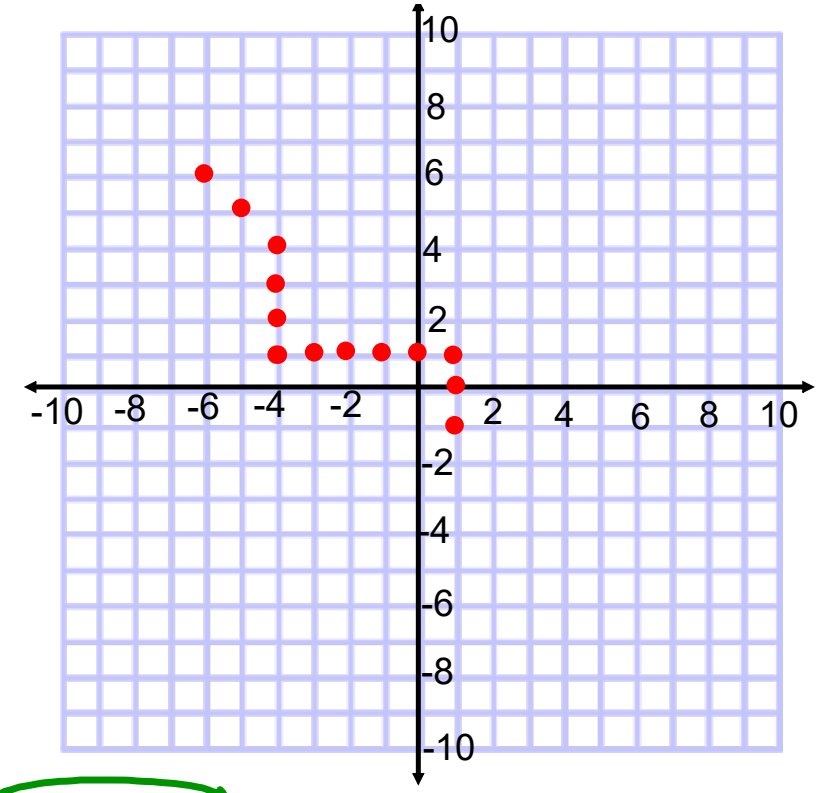
Function/ Non-Functions

Domain: $-8 \leftrightarrow 8$

$-8 < x \leq 8$

Range: 5 / -1

$-1 \leq y \leq 5$



Discrete/ Continuous:

Function/ Non-Functions

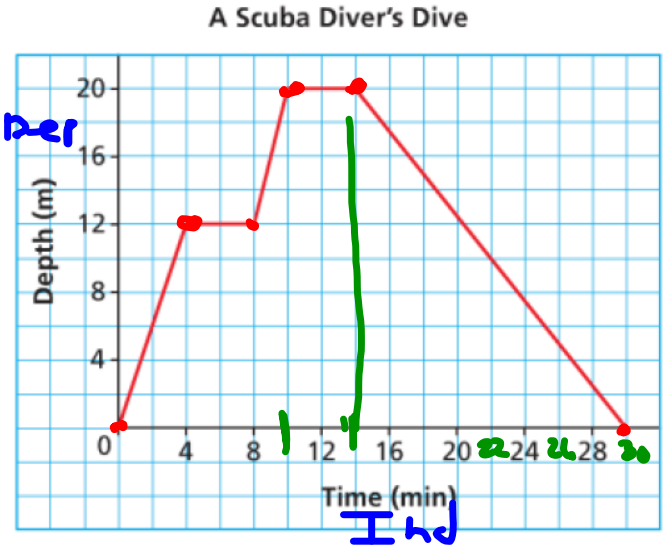
Linear or Non-Linear

Domain:

$\{x \mid -6 \leq x \leq 1, x \in I\}$

Range:

$\{y \mid -1 \leq y \leq 6, y \in I\}$



Graphs provide much information !!

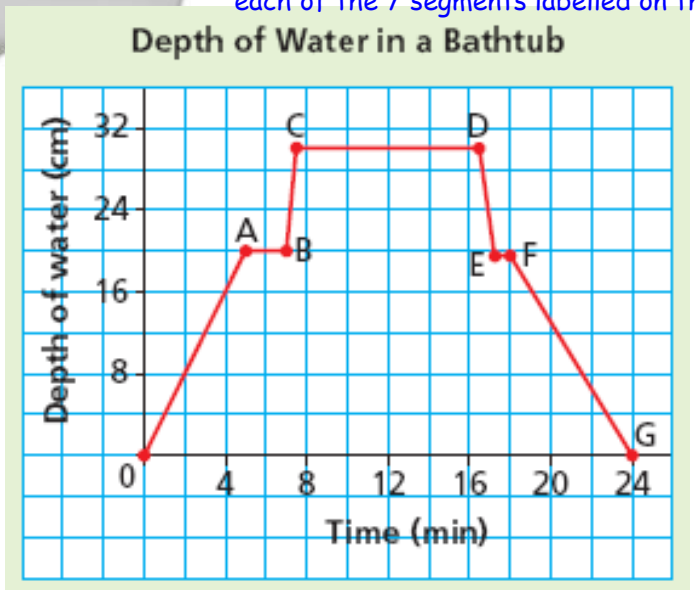
How many minutes did the dive last? 30min

At what times did the diver stop her descent? 4-8min
10-14min

What was the greatest depth the diver reached? 20m

For how many minutes was the diver at that depth? 10min to 14m
4min

Given the graph shown , provide a brief explanation of what could possibly be happening at each of the 7 segments labelled on the graph



- I will be asking for people to share their description with the class

What does segment OA represent? filling up the tub for 5 min to a depth of 20cm

What does segment AB represent? the water was turned off.

What does segment BC represent? 2 min later the person got into the tub

What does segment CD represent? the person stayed in the tub for approximately 9

What does segment DE represent? the person got out of the tub

What does segment EF represent? the person dried off

What does segment FG represent? the person pulled the plug, and it took 6 min for tub to drain

Class/Homework

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