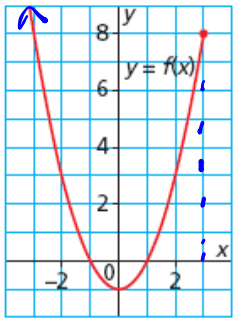
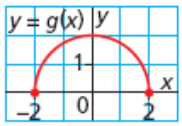
WARM - UP

Determine the domain and range of the graph of each function.

a)



b)



D: $\{-2 \le x \le 2\}$

R: $\{0 \le y \le 2\}$

D: $\{-\infty < x \le 3\}$

R: $\{-1 \le y < \infty\}$ OR $\{y \ge -1\}$

5.5 Graphs of Relations and Functions

Relations VS Functions

- a relation is where a pattern/relationship exists between the independent variable (x) and the dependent variable(y).

- a function is a special relationship where...
"each x has one and only one y value".

Properties of a Relation

Domain - describes all possible x values for the relation.
Range - describes all possible y values for the relation.
*** Write them mathematically using "set notation". ***

x - intecept: place where the relation crosses the x-axis
(happens when y equals zero)

y - intecept: place where the relation crosses the y-axis
(happens when x equals zero)

Vertical Line Test

- If a vertical line intersects more than one place on the graph, then...

The relation is NOT A FUNCTION!!!

- How can I tell from a set of points/table?

"an x value has more than one y value"

  - a function is a relation in which no two ordered pairs have the same first coordinate.

Does each graph represent a relation? A function? How can you tell?

Which of these graphs should have the data points connected? Explain.

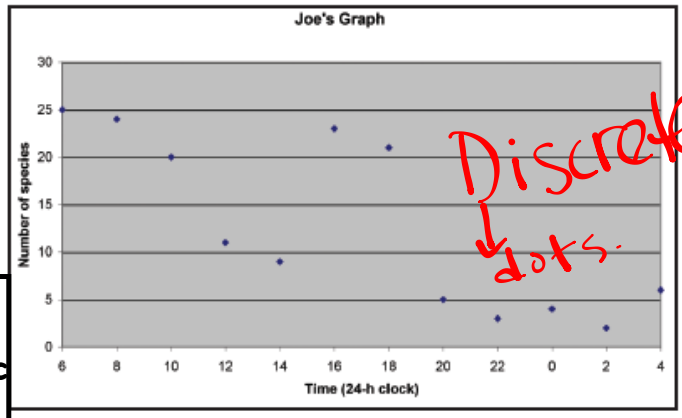
Discrete Data...

- data is taken at specific times (counting)
- graph using dots

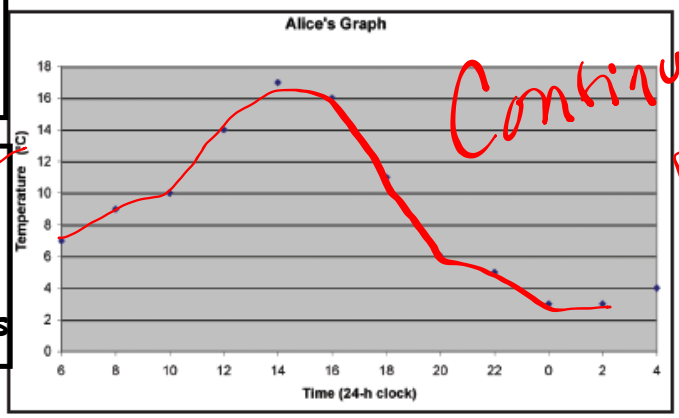
Continuous Data...

↳connected

- there are no gaps
- graph using lines/curves

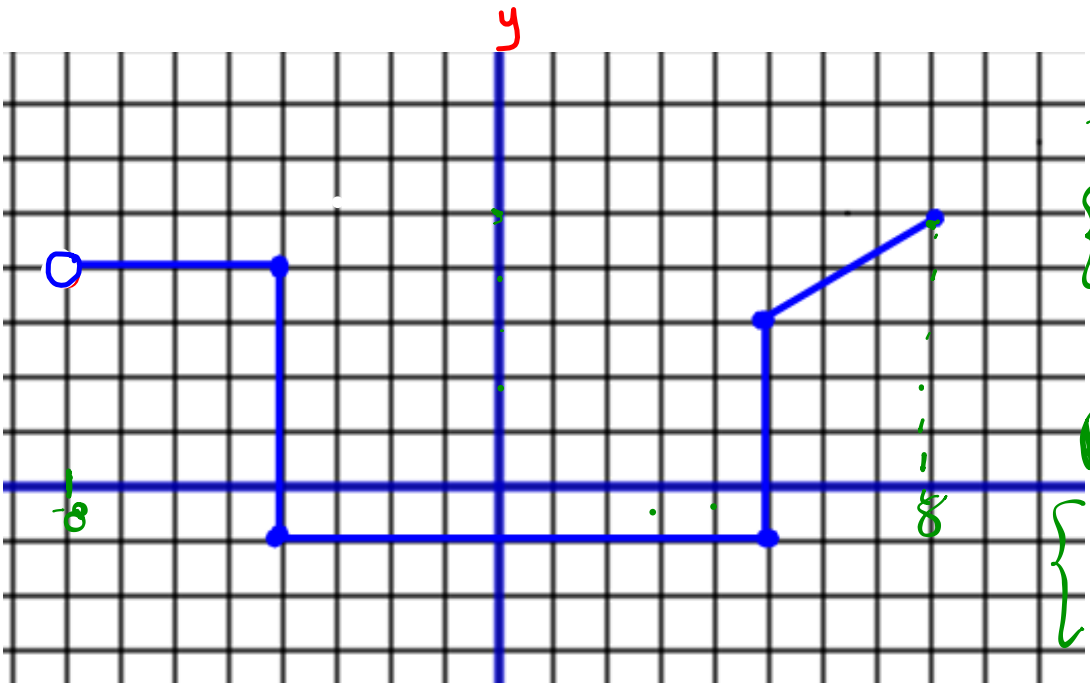


Discrete
dots.
function



Continuous.
Function

5.5 Graphs of Relations and Functions



Domain:
$\{-8 < x \leq 8\}$

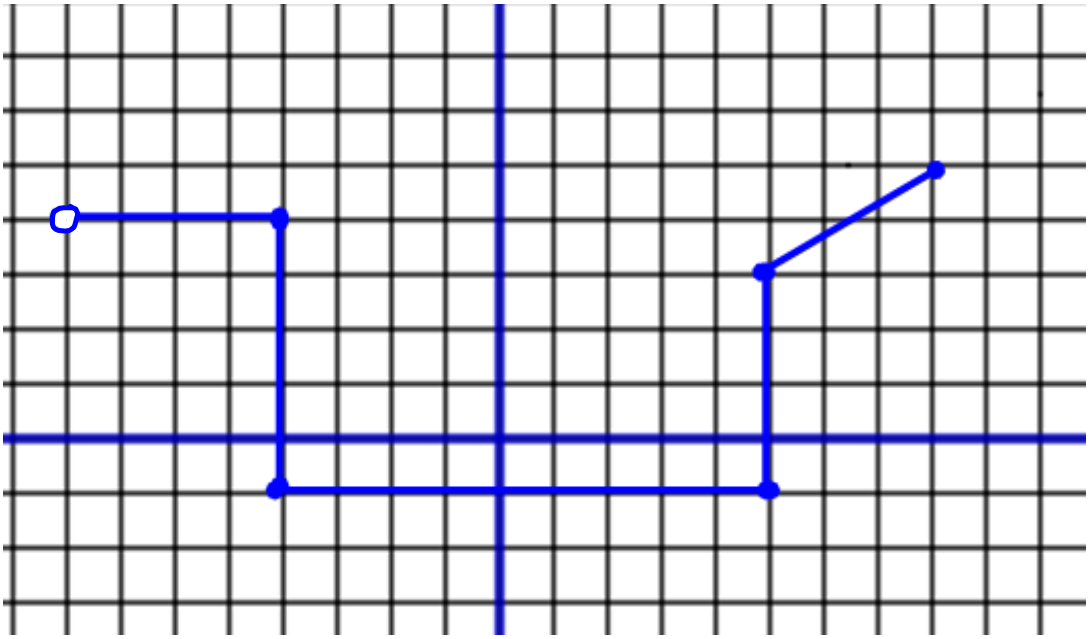
Range:
$\{-1 \leq y \leq 5\}$

Discrete/ Continuous:

Function/ Non-Functions

Domain:

Range:

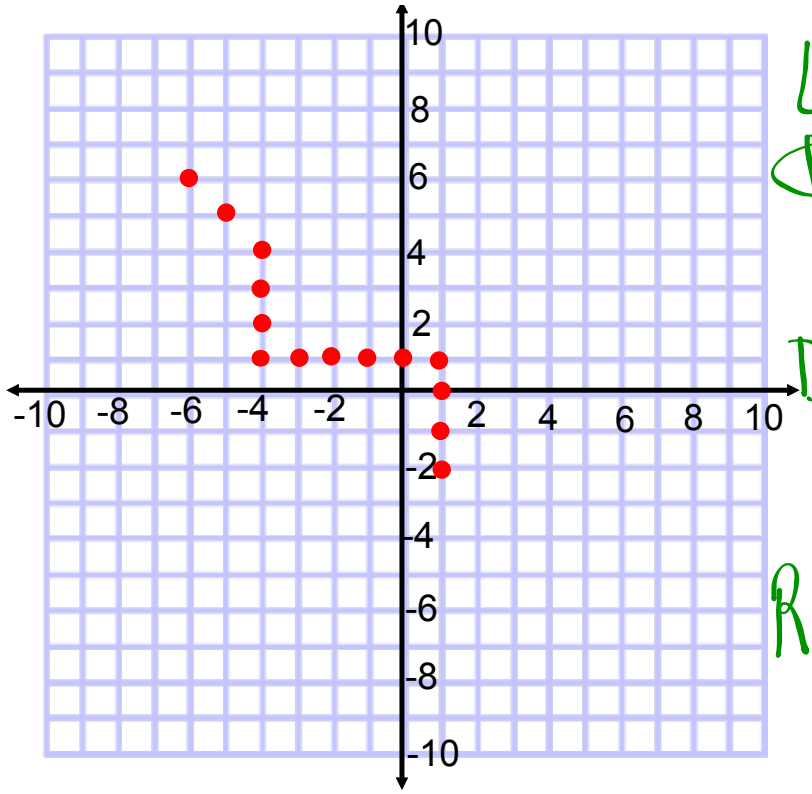


Discrete/ Continuous:

Function/ Non-Functions

Domain:

Range:



Linear or not
Discrete or Cont
Function or not

D: $\{-6 \le x \le 1, x \in I\}$

R: $\{-2 \le y \le 6, y \in I\}$

Discrete/ Continuous:

Function/ Non-Functions

Domain: Range:

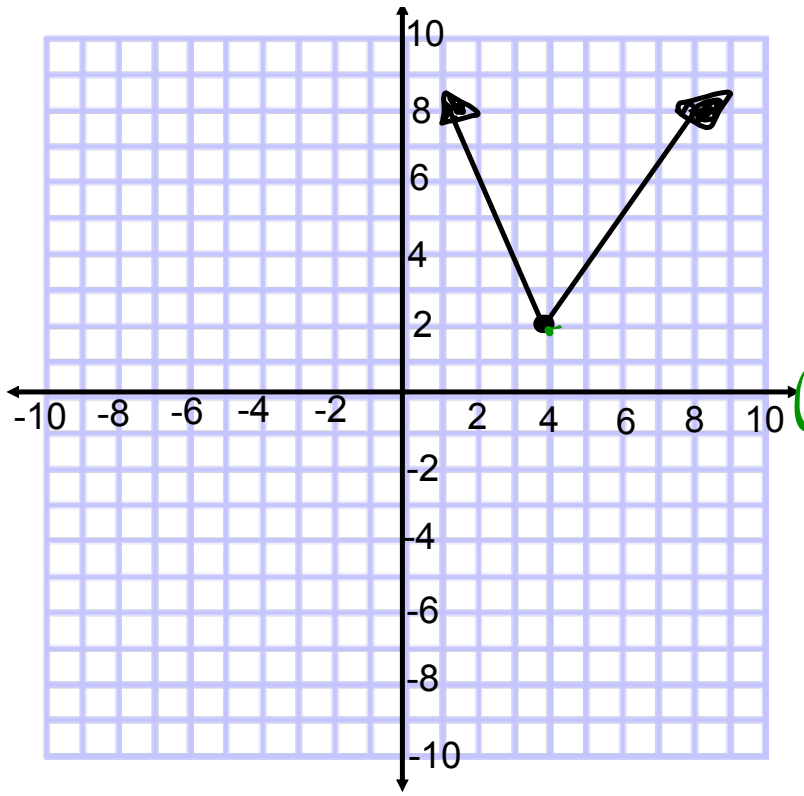
4a) Pg 294

D: $\{-2 \leq x \leq 2, x \in I\}$

or D: $\{-2, -1, 0, 1, 2\}$

R: $\{-4 \leq y \leq 4, y \in I, y \neq -3, -1, 0, 1\}$

or $\{-4, -2, 0, 2, 4\}$



L or NL

D or C

F or NF

D: $\{x \in R\}$

R: $\{2 \leq y < \infty\}$

$y \geq 2$

Discrete/ Continuous:

Function/ Non-Functions

Domain:

Range:

PRACTICE PROBLEMS:

p. 294: #4 - 9, 11

Function or Non-function
Discrete or Continuous
Linear or non-linear
D: { }
R: { }

Attachments

Worksheet - Function Notation.pdf