To rent a car for less than one week from Ace Car Rentals, the cost is $65.00 per day for the first three days, then $60.00 a day for each additional day.

independent x dependent y

Number of Days Car Is Rented	Total Cost ($)
1	65
2	130
3	195
4	255
5	315
6	375

a) Represent this relation as a set of ordered pairs.

{(1, 65) (2, 130) (3, 195) (4, 255) (5, 315) (6, 375)}

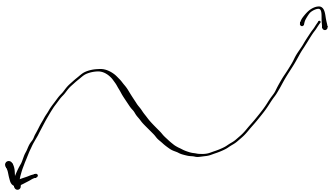
b) State the domain & Range.

D: {1, 2, 3, 4, 5, 6}

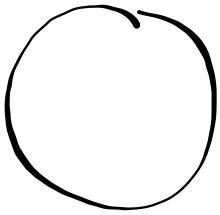
R: {65, 130, 195, 255, 315, 375}

c) Is this relation a function?

Yes because the x-values do not repeat



Function



Non function

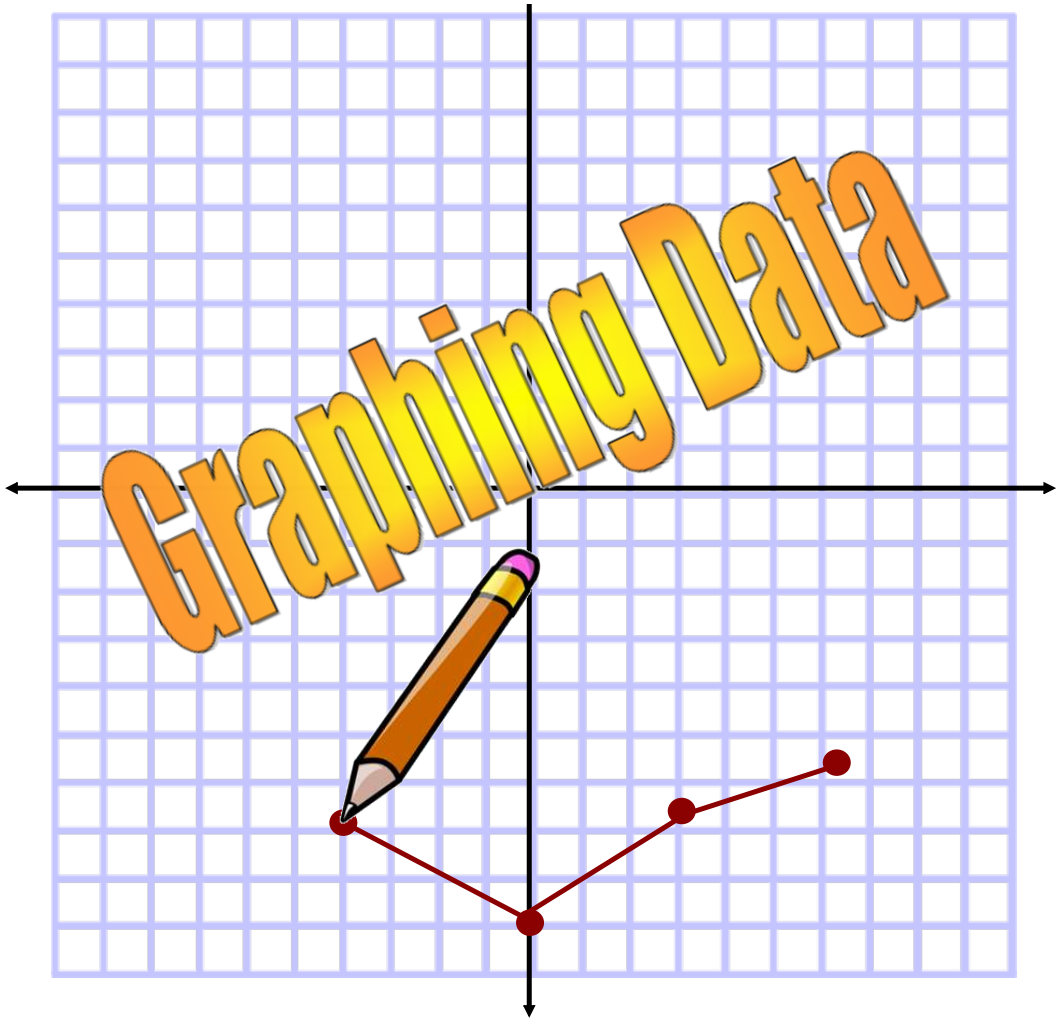
x	y
0	2
1	3
1	4
3	4
5	5
7	6

nonfunction

$\{(-2,1), (-1,3), (1,5), (3,7)\}$

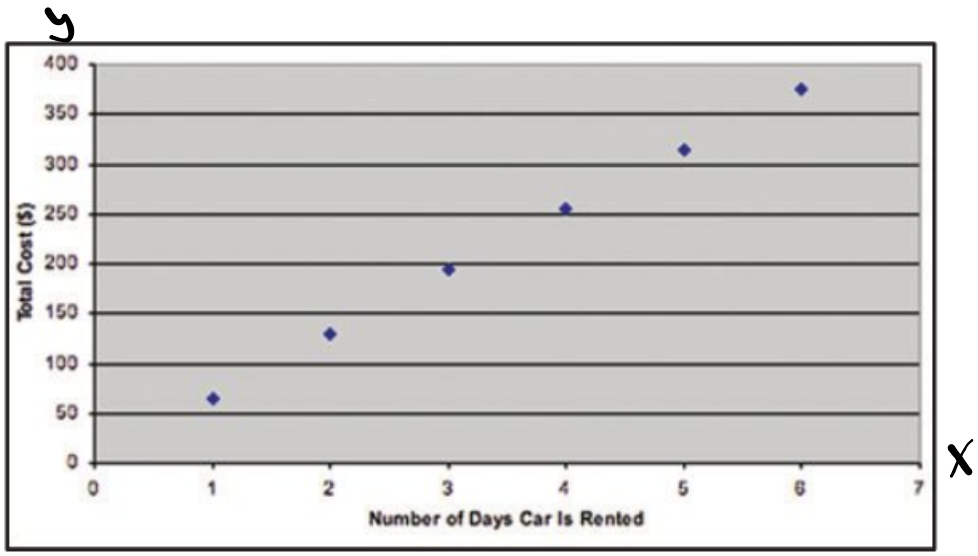
No repetition in x-values

function


Graphing Data

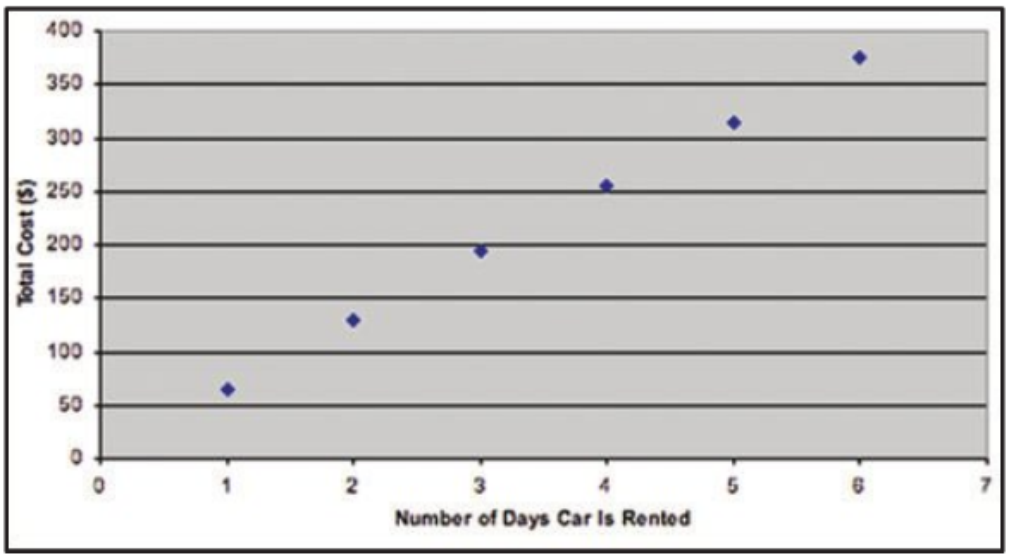
Compare the Graph with the Ordered Pairs

First set represents the number of days the car is rented.
Second set represents the total cost of renting the car.
{ (1, 65) , (2, 130) , (3, 195) , (4, 255) , (5 , 315) , (6, 375) }



Take a look at the Domain and Range

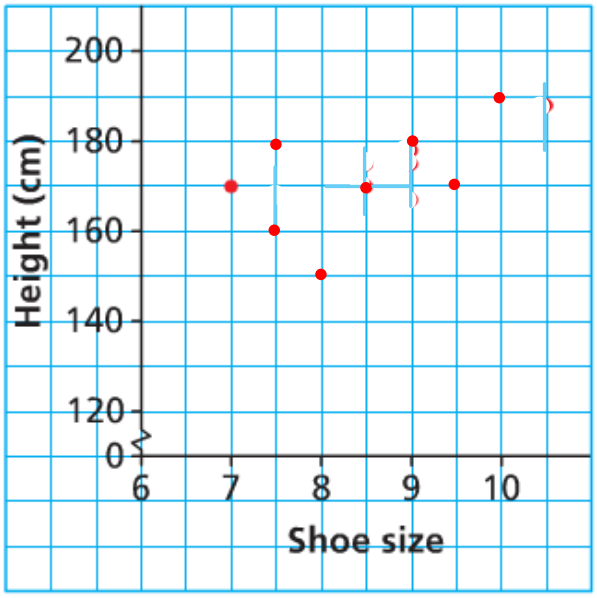
Domain {1, 2, 3, 4, 5, 6}
Range {65, 130, 195, 255, 315, 375}



What do you notice?

Domain : represents the values of x (limits on x)
Range: represents the values of y (limits on y)

Height against Shoe Size



a) State the domain & range.

D: {7, 7.5, 8, 8.5, 9, 9.5}

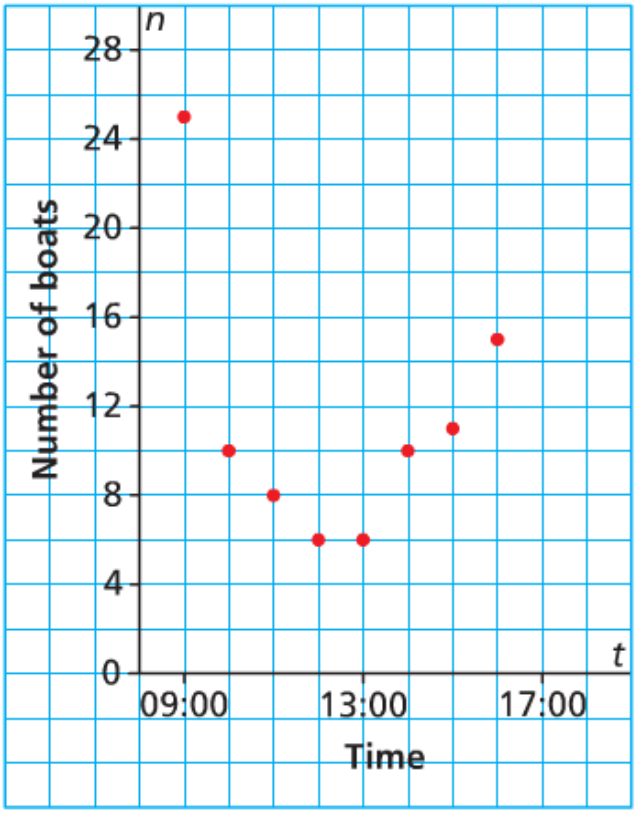
R: {150, 160, 170, 180, 190}

b) Is this relation a function?

No because the x-values repeat

c) Why are the points not connected? Explain.

Shoe sizes are made in only full or half sizes



a) State the domain & range.

D: {9, 10, 11, 12, 13, 14, 15, 16}

R: {6, 8, 10, 11, 15, 25}

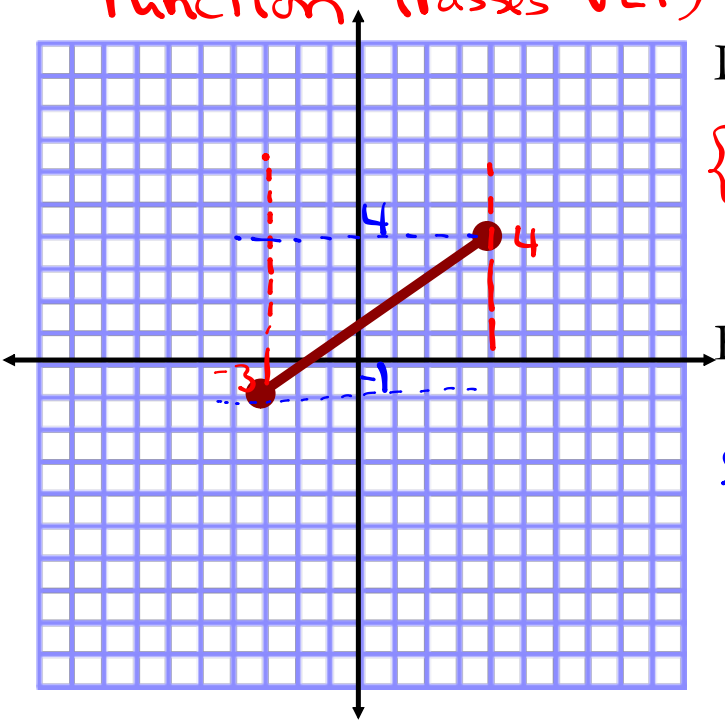
b) Is this relation a function

Yes because there is no repitition in the x-values

c) Why are the points not connected? Explain

You cannot have half (or a fraction) of a boat.

Function (Passes VLT)



Domain:

x in middle (domain)

$\{x \mid -3 \leq x \leq 4, x \in \mathbb{R}\}$

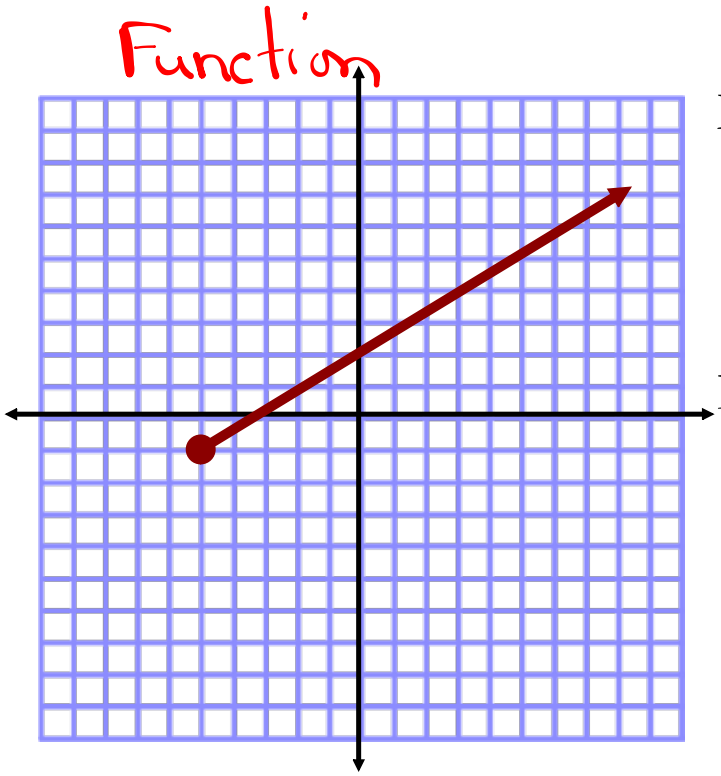
small # large #

Range:

y in middle (range)

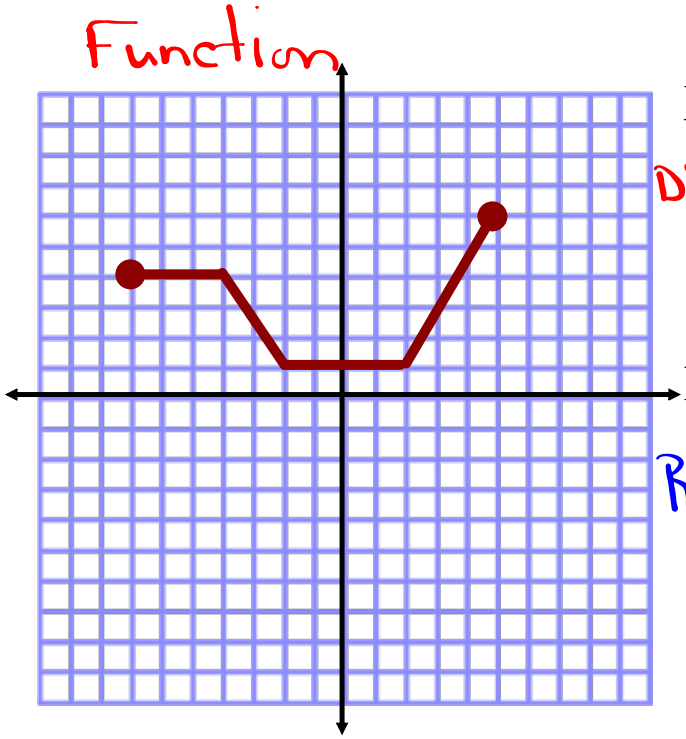
$\{y \mid -1 \leq y \leq 4, y \in \mathbb{R}\}$

small # large #



Domain:

Range:

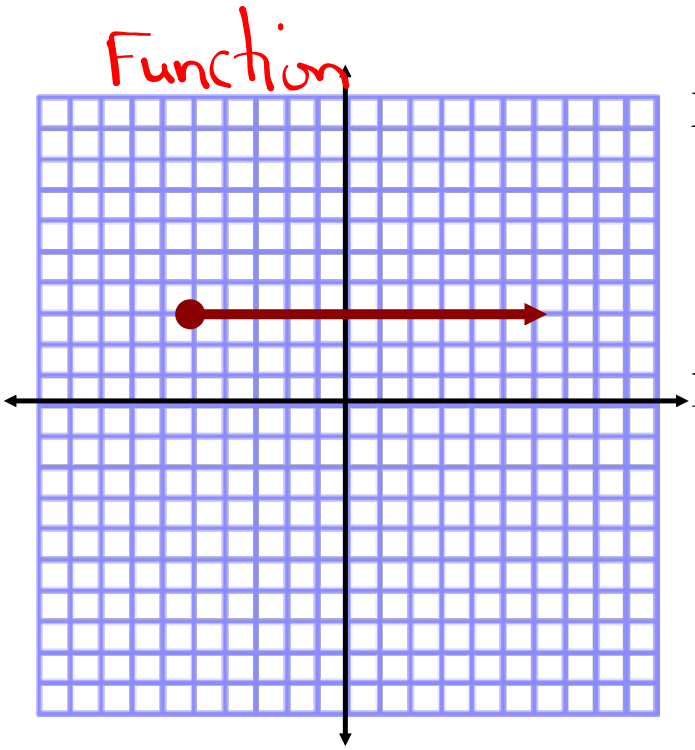


Domain:

D: $\{x \mid -7 \leq x \leq 5, x \in R\}$

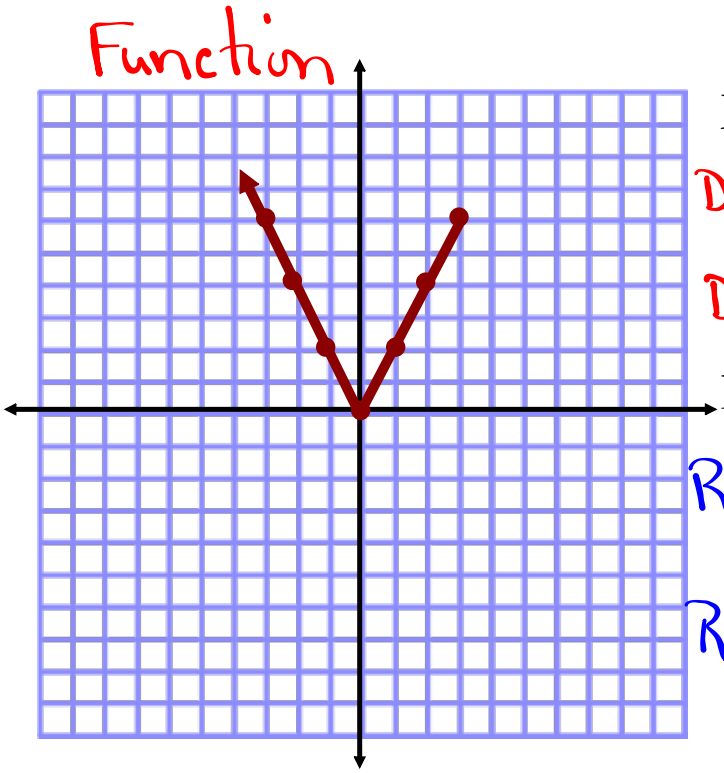
Range:

R: $\{y \mid 1 \leq y \leq 6, y \in R\}$



Domain:

Range:



Domain:

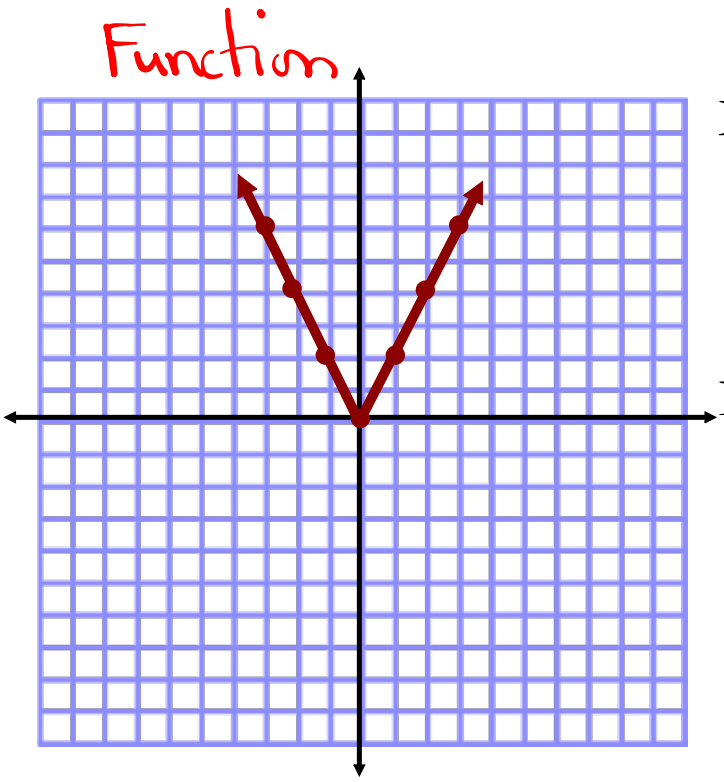
$D: \{x \mid -\infty < x \leq 3, x \in R\}$

$D: \{x \mid x \leq 3, x \in R\}$

Range:

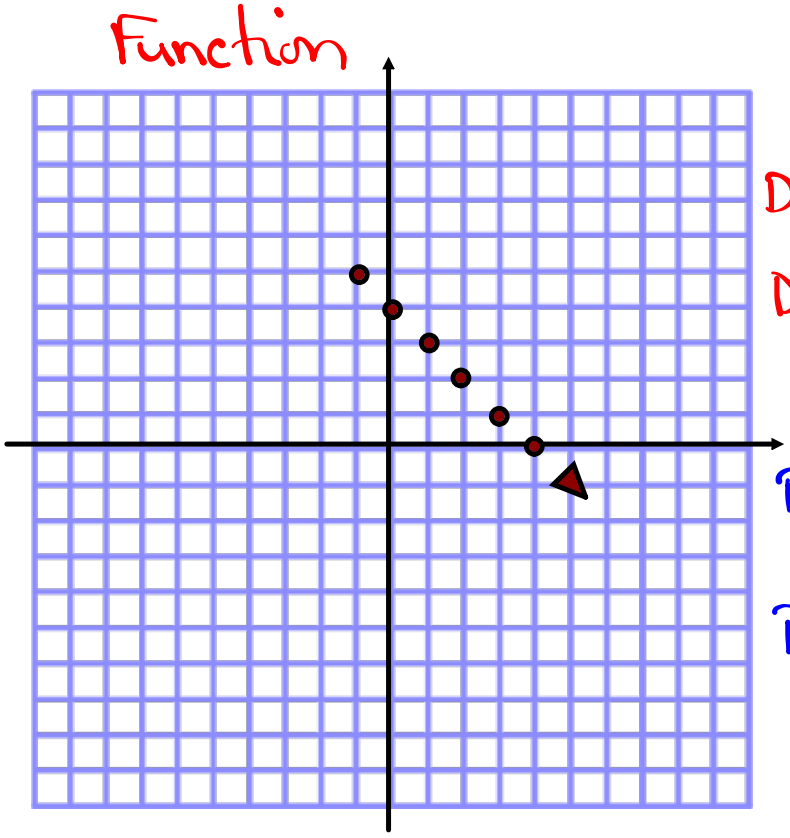
$R: \{y \mid 0 \leq y < \infty, y \in R\}$

$R: \{y \mid y \geq 0, y \in R\}$



Domain:

Range:



Domain:

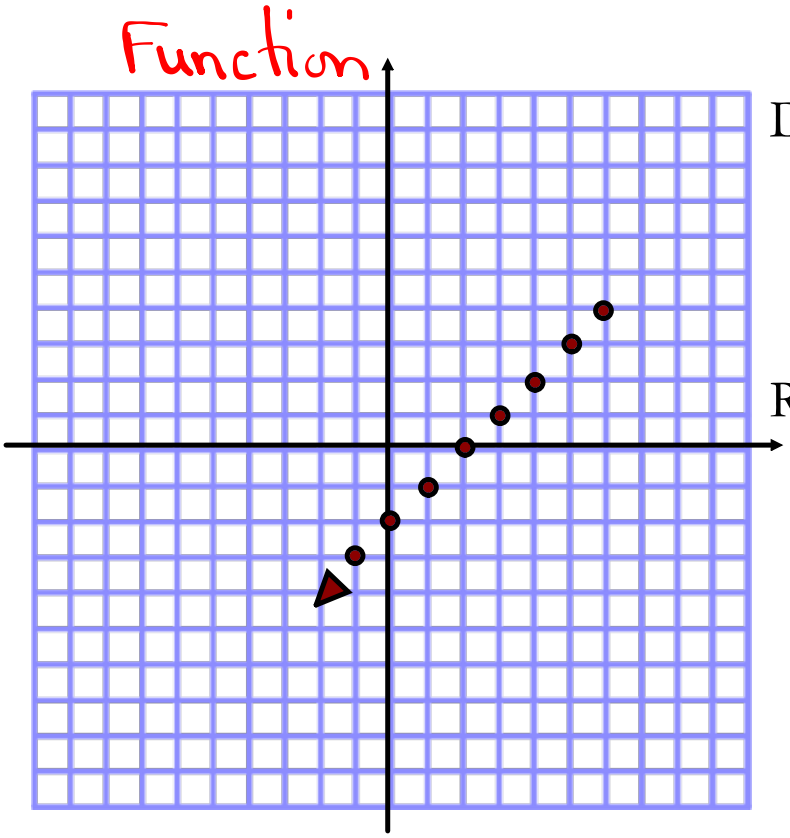
$D: \{x \mid -1 \leq x < \infty, x \in I\}$

$D: \{x \mid x \geq -1, x \in I\}$

Range:

$R: \{y \mid -\infty < y \leq 5, y \in I\}$

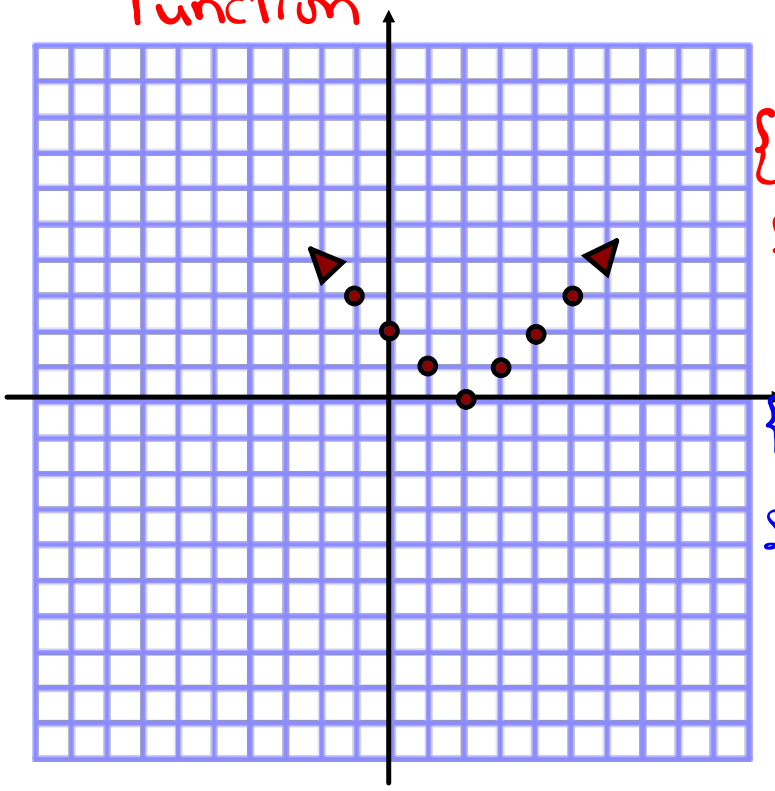
$R: \{y \mid y \leq 5, y \in I\}$



Domain:

Range:

Function



Domain:

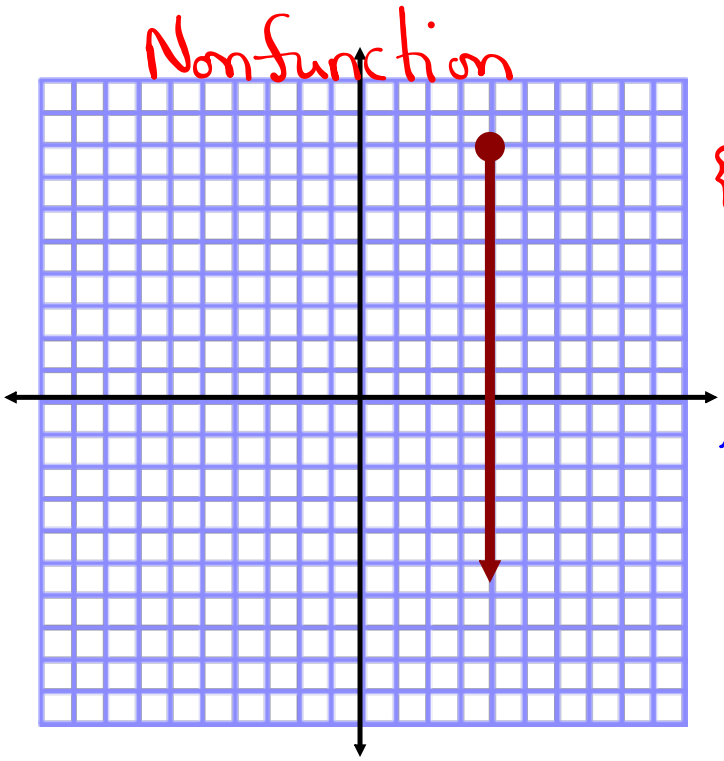
$\{x \mid -\infty \leq x \leq \infty, x \in I\}$

$\{x \mid x \in I\}$

Range:

$\{y \mid 0 \leq y < \infty, y \in I\}$

$\{y \mid y \geq 0, y \in I\}$



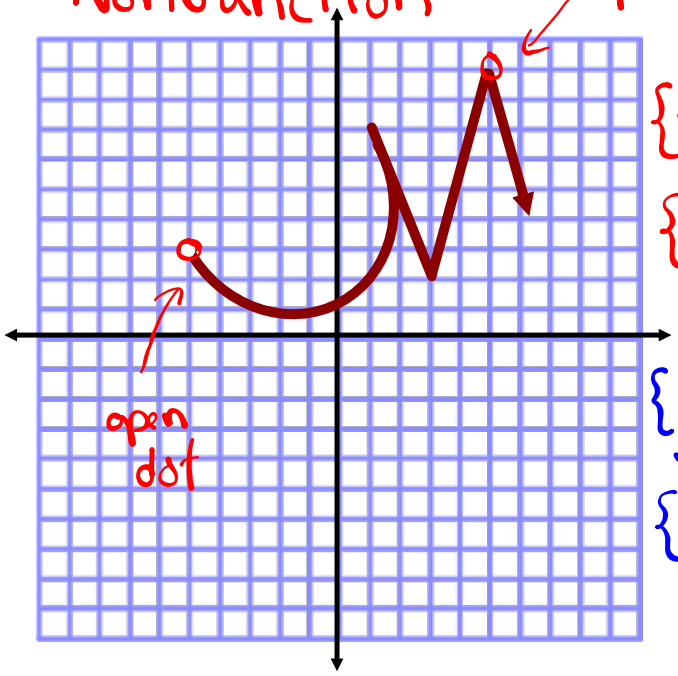
Domain:

$\{x \mid x = 4, x \in \mathbb{R}\}$

Range:

$\{y \mid -\infty < y \leq 8, y \in \mathbb{R}\}$

$\{y \mid y \leq 8, y \in \mathbb{R}\}$



Domain:

$\{x \mid -5 < x < \infty, x \in R\}$

$\{x \mid x > -5, x \in R\}$

Range:

$\{y \mid -\infty < y < 9, y \in R\}$

$\{y \mid y < 9, y \in R\}$

Assignment

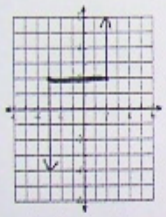
Page 294 #4, 6, 7, 8, 9, 10, 11, 12, 14

D&R Function or Nonfunction

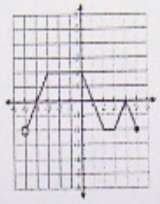
Domain and Range Worksheet #1 Name: _____

State the domain and range for each graph and then tell if the graph is a function (write yes or no). If the graph is a function, state whether it is discrete, continuous or neither.

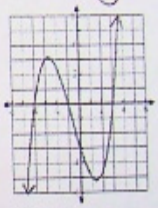
1) Domain $\{x \mid -3 \le x \le 0, x \in R\}$
Range $\{y \mid y \in R\}$
Function? No



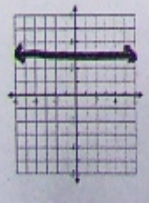
2) Domain $\{x \mid -5 < x \le 5, x \in R\}$
Range $\{y \mid -2 \le y < 2, y \in R\}$
Function? yes



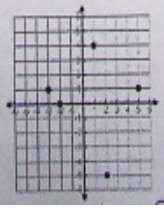
3) Domain $\{x \mid x \in R\}$
Range $\{y \mid y \in R\}$
Function? yes



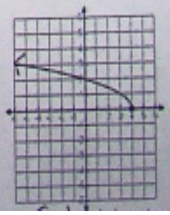
4) Domain $\{x \mid x \in R\}$
Range $\{y \mid y = 3, y \in R\}$
Function? yes

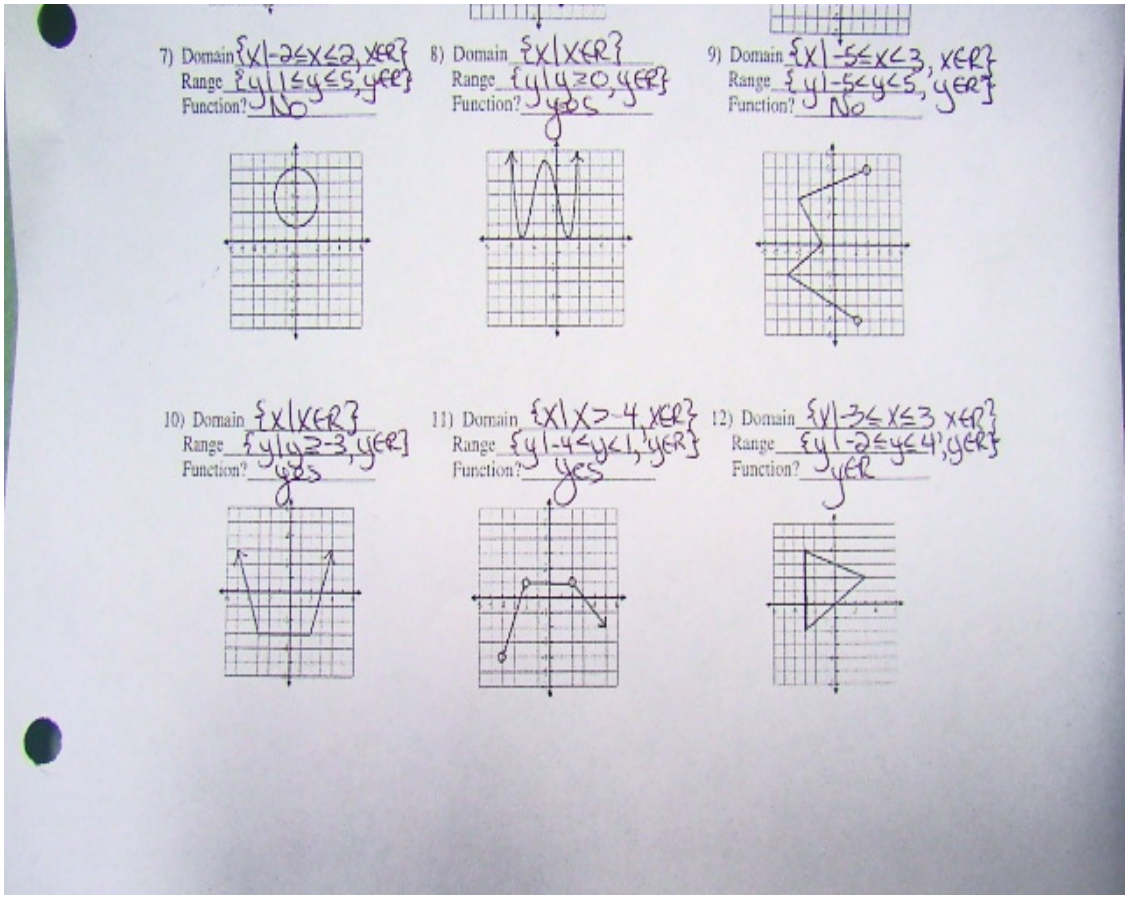


5) Domain $\{x \mid -3 \le x \le 5, x \in I\}$
Range $\{y \mid -5 \le y \le 4, y \in I\}$
Function? yes



6) Domain $\{x \mid x \le 4, x \in R\}$
Range $\{y \mid y \ge 0, y \in R\}$
Function? yes




7) Domain {x|-2≤x≤2, x∈R}
Range {y|1≤y≤5, y∈R}
Function? No
8) Domain {x|x∈R}
Range {y|y≥0, y∈R}
Function? yes
9) Domain {x|-5≤x<3, x∈R}
Range {y|-5<y<5, y∈R}
Function? No
10) Domain {x|x∈R}
Range {y|y≥-3, y∈R}
Function? yes
11) Domain {x|x>-4, x∈R}
Range {y|-4<y<1, y∈R}
Function? yes
12) Domain {y|-3≤x≤3 x∈R}
Range {y|-2≤y≤4}, y∈R}
Function? yes

Graph the Following Relation

Number of Cans of Juice Purchased, n	Cost, C ($)
1	2.39
2	4.00
3	6.39
4	8.00
5	10.39
6	12.00