Your Name

Mrs. Theo

10/28/2020

Day 3

Notes

3.1 Independent and Dependent Relationships and Domain and Range

Independent Variable

The event or variable that stands by itself, it is the cause

The Input or x variable and is plotted on the x-axis

Dependent Variable

The event or variable that depends on the independent variable and changes depending on it

The Output or y variable and is plotted on the y-axis

Independent Variable Ex.	Dependent Variables Ex.
time worked,	money earned,
age,	height,
number of objects bought	total cost

Depends on

Determining Independent and Dependent Variables

Ask yourself: which variable depends on the other?
This will be the dependent variable

Car insurance costs increase with traffic violations and accidents

Independent X: Traffic violations + accidents

Dependent Y: Car insurance cost

Ice cream sales increase as the temperature increases

Independent X: Temperature

Dependent Y: Ice cream sales

Aiden charges $25 per hour to fix your computer

Independent X: # hours worked

Dependent Y: Cost to fix computer

States with larger population have more seats in the House of Representatives

Independent X: Population size

Dependent Y: # of seats in the House of Representatives

Let's Explore Domain and Range more!

Go to student.desmos.com

and type in:

YYWA5K

Domain and Range for connected points

When points are connected by a curved line, then there would be too many values to write all the values of the ordered pairs as a set (we would have to include every decimal between each two integer numbers)...

So instead we use inequalities

Domain: leftmost x value < x < rightmost x value

ex. $-4 < x < 9$

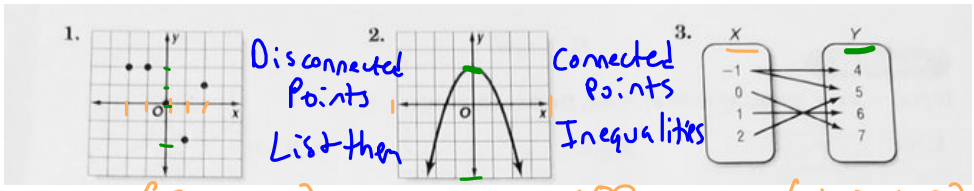
Range: lowest y value < y < highest y value

ex. $-2 < y < 5$

-use < if the value is not included

-use ≤ if the value is included

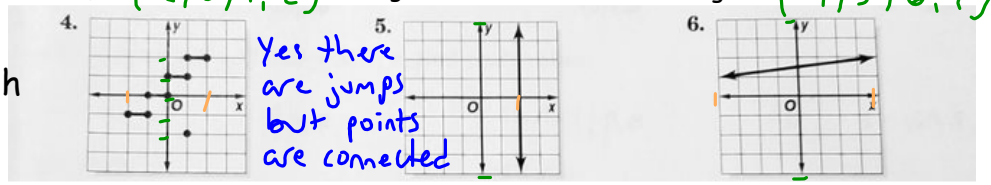
State the Domain and Range for each



Domain: {-2, -1, 0, 1, 2}
Range: {-2, 0, 1, 2}

Domain: $-\infty < x < \infty$
Range: $-\infty < x \leq 2$

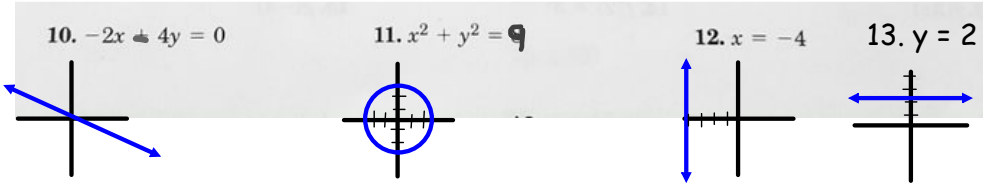
Domain: {-1, 0, 1, 2}
Range: {4, 5, 6, 7}



Domain: $-2 \leq x \leq 2$
Range: {-2, -1, 0, 1, 2}

Domain: {2}
Range: $-\infty < y < \infty$

Domain: $-\infty < x < \infty$
Range: $-\infty < y < \infty$



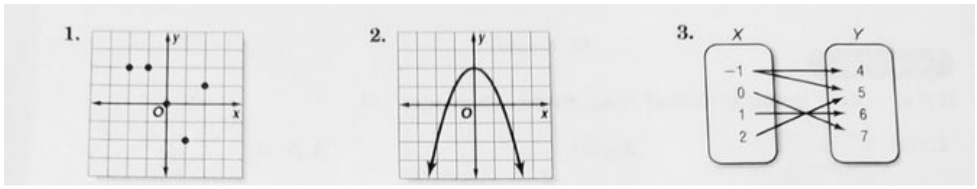
Domain:
Range:

Domain:
Range:

Domain:
Range:

Domain:
Range:

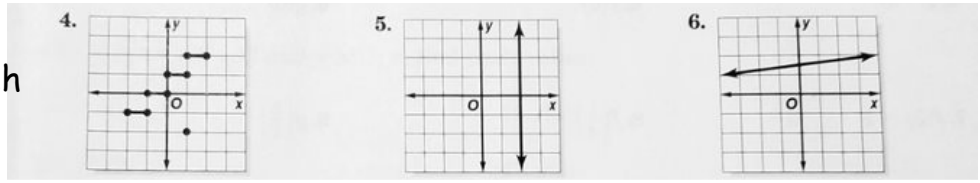
State the Domain and Range for each



Domain:
Range:

Domain:
Range:

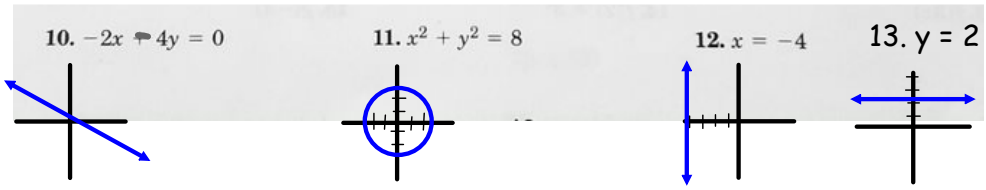
Domain:
Range:



Domain:
Range:

Domain:
Range:

Domain:
Range:



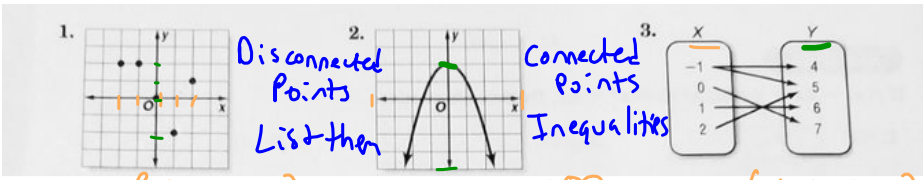
Domain:
Range:

Domain:
Range:

Domain:
Range:

Domain:
Range:

State the Domain and Range for each



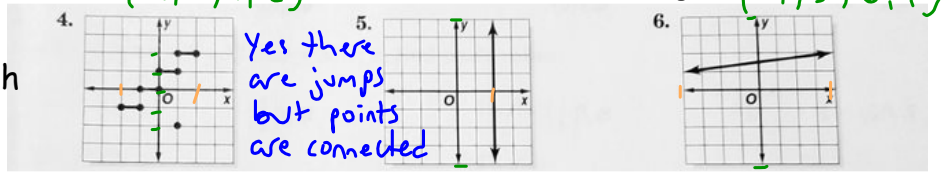
Disconnected Points
List them

Connected Points
Inequalities

Domain: $\{-2,-1,0,1,2\}$
Range: $\{-2,0,1,2\}$

Domain: $-\infty < x < \infty$
Range: $-\infty < x \leq 2$

Domain: $\{-1,0,1,2\}$
Range: $\{4,5,6,7\}$

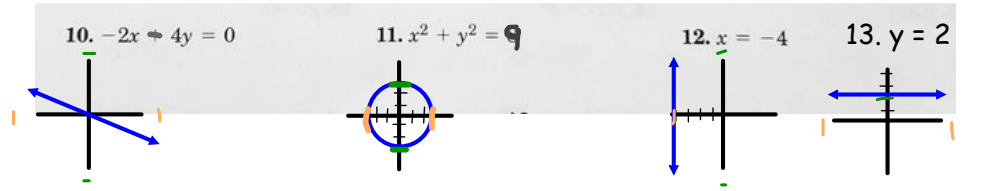


Yes there are jumps but points are connected

Domain: $-2 \leq x \leq 2$
Range: $\{-2,-1,0,1,2\}$

Domain: $\{2\}$
Range: $-\infty < y < \infty$

Domain: $-\infty < x < \infty$
Range: $-\infty < y < \infty$



Domain: $-\infty < x < \infty$
Range: $-\infty < y < \infty$

Domain: $-3 \leq x \leq 3$
Range: $-3 \leq y \leq 3$

Domain: $\{-4\}$
Range: $-\infty < y < \infty$

Domain: $-\infty < x < \infty$
Range: $\{2\}$