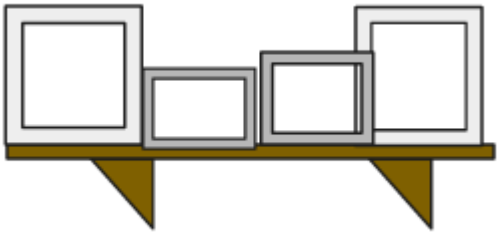
Determine if a function is discrete or continuous by analyzing its domain, Practice Set C

Name _____

Date _____

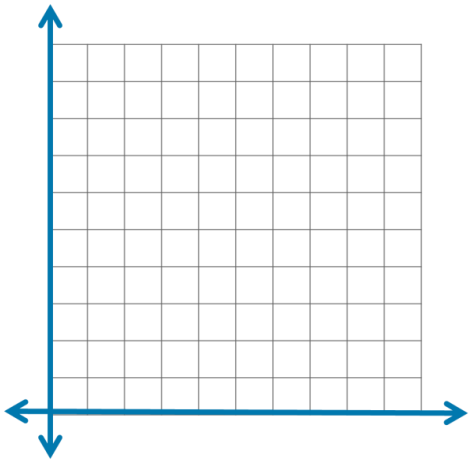
1. Your mom wants to line a 3-foot shelf with pictures from your trip to Cancun. You have *x* 3-inch pictures and *y* 6-inch pictures**.**



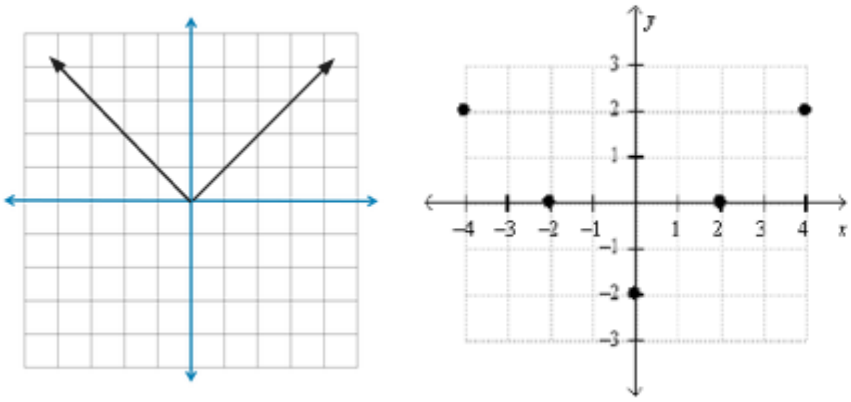
a. Write an equation showing all combinations of 3-inch pictures (x) and 6-inch pictures (y) that will fit on the shelf.

b. Is this function continuous or discrete? Explain.

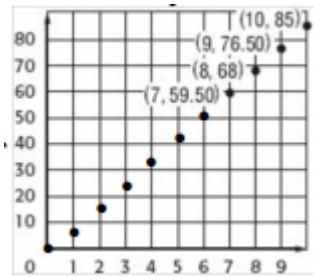
c. How many of each can she get on the shelf if they can't overlap? Graph all possible solutions for this situation.



2. Compare and contrast the domain and range for these 2 functions.



3. Jarod says this graph is continuous because it is increasing at a constant rate.



a. Do you agree with him? Why or why not?

b. Describe a situation this graph could represent. Label your domain and range and explain why your situation works.

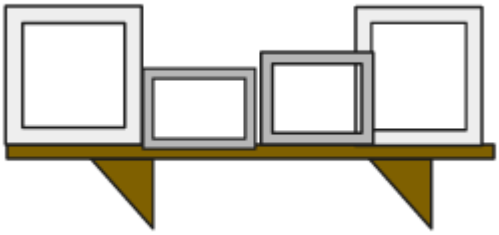
4. Create a situation that would be continuous and nonlinear.

   a. Discuss what domain and range variables would work and why.

   b. Sketch the graph of your situation.

Determine if a function is discrete or continuous by analyzing its domain, Practice Set C Answer Key

1. Your mom wants to line a 3-foot shelf with pictures from your trip to Cancun. You have *x* 3-inch pictures and *y* 6-inch pictures**.**



a. Write an equation showing all combinations of 3-inch pictures (x) and 6-inch pictures (y) that will fit on the shelf.

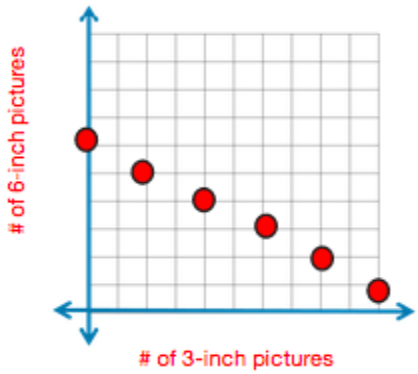
$3x + 6y = 36$

b. Is this function continuous or discrete? Explain.

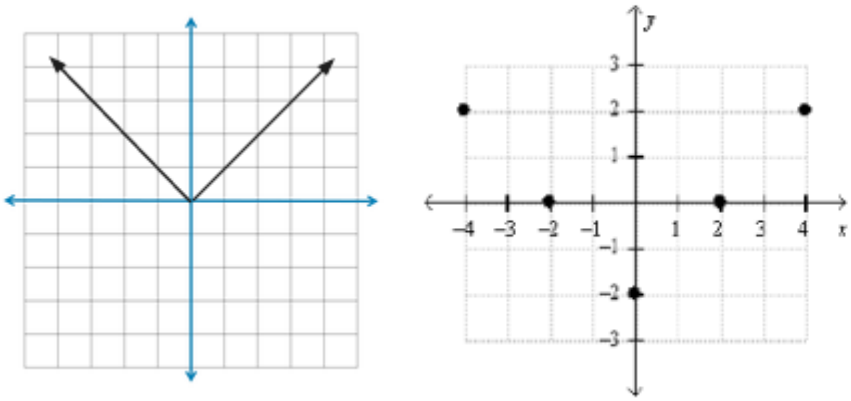
This function is discrete because you can't have part of a picture frame.

c. How many of each can she get on the shelf if they can't overlap? Graph all possible solutions for this situation.

0	6
2	5
4	4
6	3
8	2
10	1
12	0



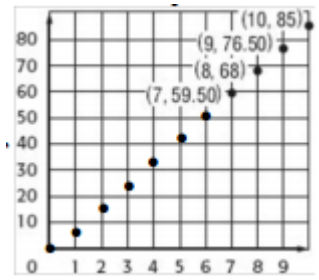
2. Compare and contrast the domain and range for these 2 functions.



The first graph is continuous, has a domain of all real numbers, has a range of all real numbers greater than or equal to 0.

The second graph is discrete, has a domain of {-4, -2, 0, 2, 4}, has a range of {-2, 0, 2}.

3. Jarod says this graph is continuous because it is increasing at a constant rate.



a. Do you agree with him? Why or why not?

No, it is an increasing function, but it is continuous because the points are not connected.

b. Describe a situation this graph could represent. Label your domain and range and explain why your situation works.

Answers will vary. Check to see that each student's scenarios, domains, and range make sense.

4. Create a situation that would be continuous and nonlinear.

    a. Discuss what domain and range variables would work and why.

Answers will vary. Check to see if students' answers make sense. One scenario is the height of a football kicked over time.

b. Sketch the graph of your situation.