3.1.1 Relation Investigation

Name: _____

Date: _____ Period:_____
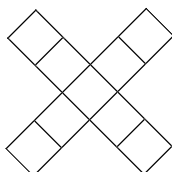
1. Use color tiles to make as many X shapes as you can. Record the length of the "arms" and the number of tiles used.

   Ex. This shape has arms 2 units long:
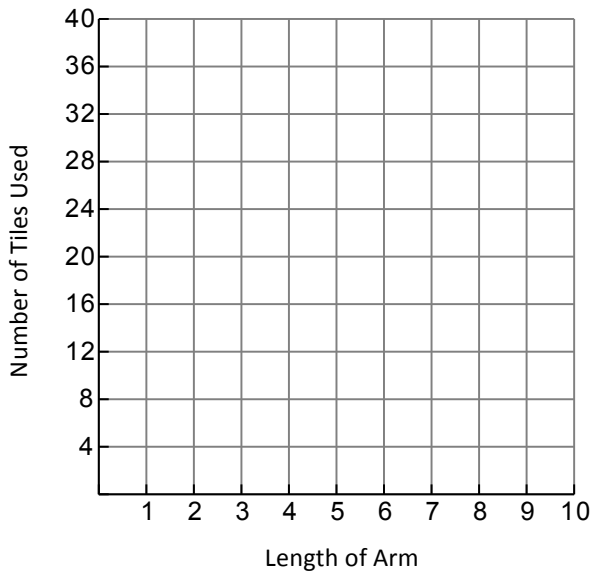
   a. Make a table.

Length of Arm	Tiles Used

   b. Make a graph.
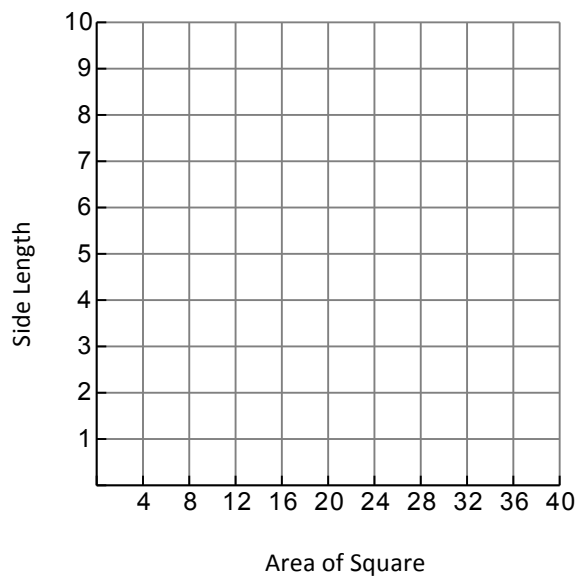

2. Use color tiles to make as many different size squares as you can. Record the areas and side lengths.

   a. Make a table.

Area	Side Length

   b. Make a graph.

3. Use _____ color tiles to make as many rectangles as you can. Record the lengths and widths in the table below, counting rotations separately (for example, 2 x 3 is not the same as 3 x 2). We chose the length as independent, but we could have chosen the width instead.

a. Make a table.

Length	Width

b. Make a graph.

4. Draw a 4 x 4 square anywhere on the grid below. Record the x- and y-coordinates of 8 points on the square (whole numbers only).

a. Draw a 4 x 4 square.

b. Make a table of 8 points on the square.

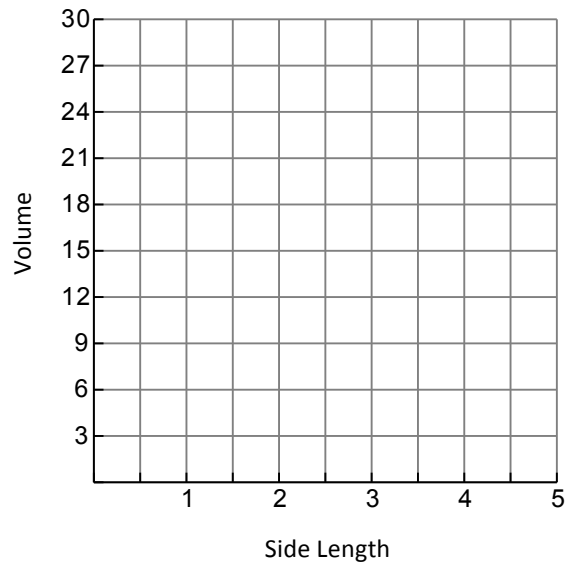| x-coordinate	y-coordinate

5. Use wooden cubes or dice to make as many different size cubes as you can. Record the side lengths and volumes.

a. Make a table.

Side Length	Volume

b. Make a graph.

Volume

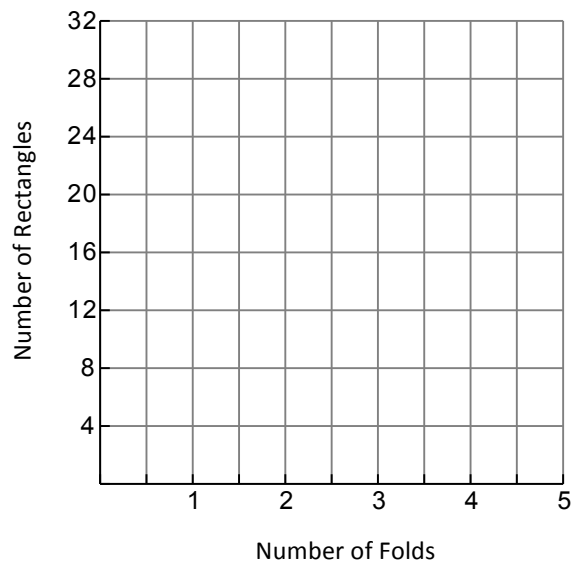30
27
24
21
18
15
12
9
6
3

1   2   3   4   5

Side Length

6. Take a piece of paper. How many rectangles do you see when it's not folded? Fold it in half once and open it again. How many rectangles do you see? Fold it back up, and then fold it in half again. Open it and count the rectangles. Keep doing this for five folds.
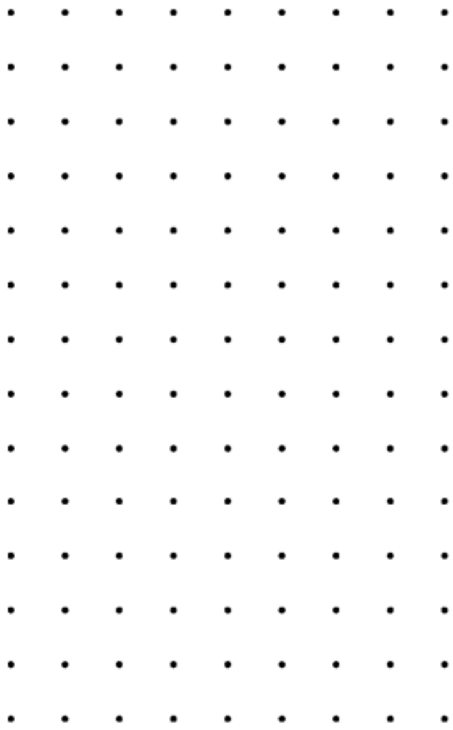
a. Make a table.

Folds	Rectangles
0	
1	
2	
3	
4	
5	

b. Make a graph.

Number of Rectangles
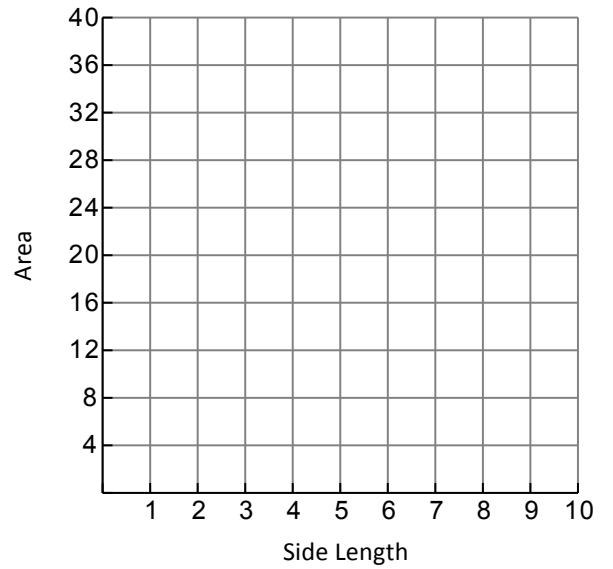
32
28
24
20
16
12
8
4

1   2   3   4   5

Number of Folds

7. Use Geoboards or dot paper to make as many squares as you can. Record the side lengths and areas.

a. Make a table.

Side Length	Area

b. Make a graph.

8. Roll a die 12 times. Record the number of the roll next to the number on the die in the table. Separate multiple roll numbers with commas.

a. Make a table.

Number on the die	Number of the roll
1	
2	
3	
4	
5	
6	

b. Make a graph.