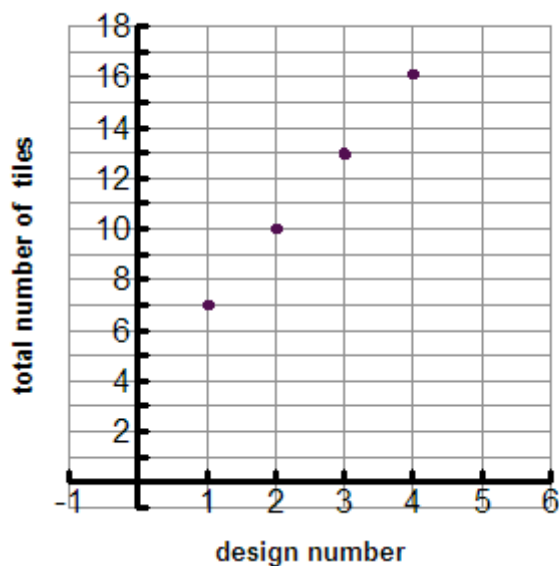


**TASK 1.1.5: FROM GRAPHS TO PATTERNS****Solutions****I.**

1. Given the following graph, use blocks to generate a sequence of figures that fits the data. Fill in the table and sketch the figures



Design number	Picture/Drawing	Written Description	Process Column	Total Number of Tiles
1				7
2				10
3				13
4				16
n				$4 + 3n$

*Algebra I: Strand 1. Foundations of Functions; Topic 1. Identifying Patterns; Task 1.1.5*

2. Explain how you created your figures using the data from the scatter plot.

*Answers will vary.*

3. Describe how you found your rule.

*Answers will vary.*

Exercise II on page 5, there are two different patterns in the scatter plot. Students should record similarities:

Same domain

Same starting point

And differences:

Different range

One increasing and one decreasing

Exercise III on page 6, there are two different patterns in the scatter plot. Student should record similarities:

Same domain

Increase at same rate

And differences:

Different range

Different starting points

The two scatter plots will never cross since they started at different numbers and are adding the same amount each time they will never have the same number of tiles on the same design number.

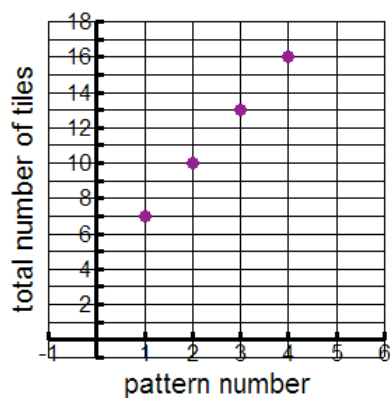
### **Math notes**

This pattern activity contains 3 different scatter plots and the students are to create figures from the data. This is a way to assess whether or not the student is making a connection to the informal development of rate of change and starting point from a graphical representation. The idea of going back and forth between representations, **doing and undoing**, is a major mathematical habit of thinking that enhances mathematical understanding.

The students are expected to analyze and apply the information from the scatter plot including the constant and the rate of change in the pattern. Specific patterns may vary from student to student. Teachers must check to ensure accuracy.

**TASK 1.1.5: FROM GRAPHS TO PATTERNS****I.**

1. Given the following graph, use blocks to generate a sequence of figures that fits the data. Fill in the table and sketch the figures



Design number	Visual	Written Description	Process Column	Total Number of Tiles
1				
2				
3				
4				
n				

*Algebra I: Strand 1. Foundations of Functions; Topic 1. Identifying Patterns; Task 1.1.5*

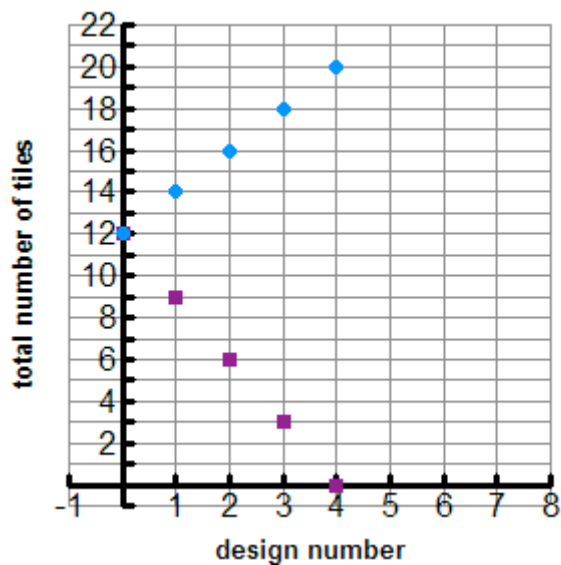
2. Explain how you created your figures using the data from the scatter plot.

3. Describe how you found your rule.

*Algebra I: Strand 1. Foundations of Functions; Topic 1. Identifying Patterns; Task 1.1.5*

**II.**

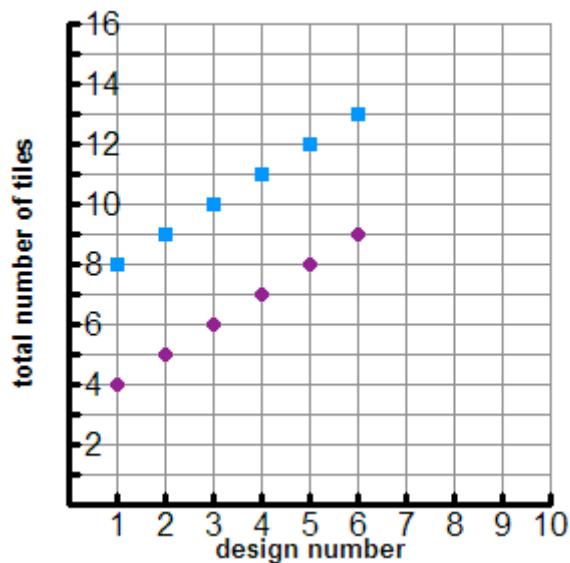
The following graph displays two different patterns, one pattern is marked with circles and the other pattern is marked with rectangles. Describe the similarities and differences between the patterns.



Similarities in the patterns	Differences in the patterns

**III.**

The following graph displays two different patterns, one pattern is marked with circles and the other pattern is marked with rectangles. Describe the similarities and differences between the patterns



Similarities in the patterns	Differences in the patterns

Will there ever be a time when the two patterns have the same design number with the same number of tiles? Explain.