

Master 10.17

Extra Practice 1

Lesson 1: Representing Patterns

1. a) Write a pattern rule for the number of squares in a frame.

Pattern 1

Frame Number	Number of Squares in a Frame
1	2
2	4
3	6
4	8
5	10

Pattern 2

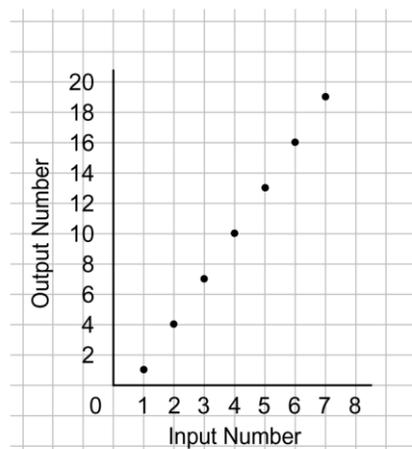
Frame Number	Number of Squares in a Frame
1	3
2	7
3	11
4	15
5	19

- b) Use grid paper. Shade squares to model each pattern.
c) Graph each pattern.

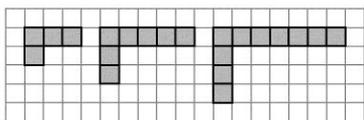
2. For each pattern in question 1, does any frame have 54 squares?
How do you know?

Lesson 2: Relating Graphs and Input/Output Machines

1. Draw an Input/Output machine with two operations that will produce this graph.



2. a) Use grid paper.



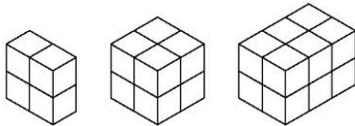
Draw Frames 4 and 5 of this growing pattern.

- b) The input number is the frame number.
The output number is the number of squares.
Draw an Input/Output machine to model this pattern.

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Extra Practice 2**Lesson 3: Patterns in Geometry**

Here are the first 3 frames of a growing pattern made with centimetre cubes.



1. Use triangular dot paper.
Draw the next 2 frames in this pattern.
2. Find the volume and surface area of the prism in each of the first 5 frames. Record the frame number, the volume, and the surface area in a table.
3. How is the volume related to the frame number?
4. How is the surface area related to the frame number?

Lesson 4: Relating Distance, Average Speed, and Time

The table shows the distance Colton travelled each hour for 5 h.

Time (h)	Distance (km)
0	0
1	45
2	90
3	135
4	180
5	225

1. Display the data in a continuous line graph.
2. Suppose the input number is time and the output number is distance. Draw an Input/Output machine that would give the numbers in the table.
3. What was Colton's average speed?