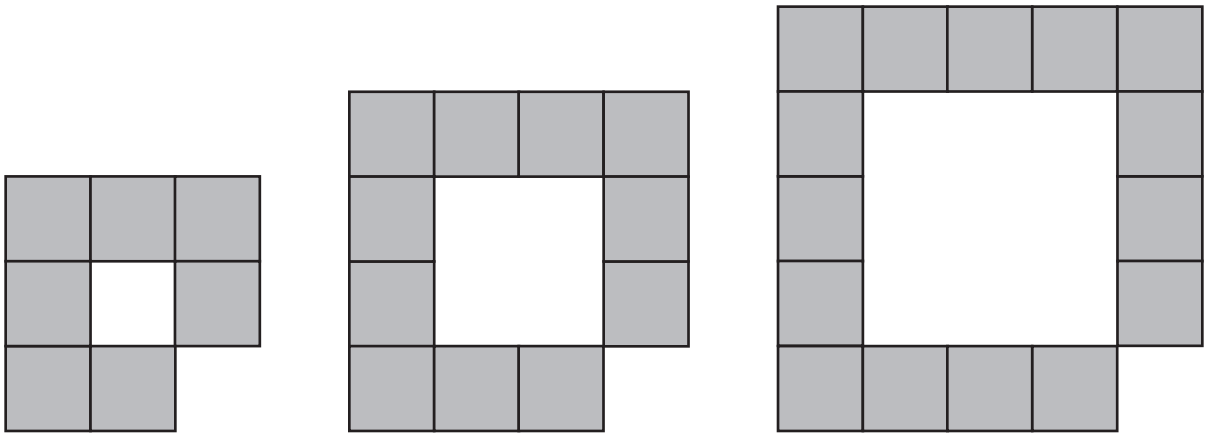
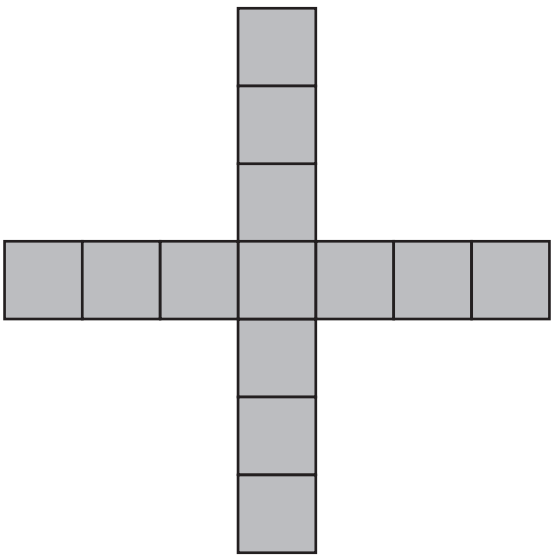
What does the 20th shape in this pattern look like?
How many squares are in the 20th shape?



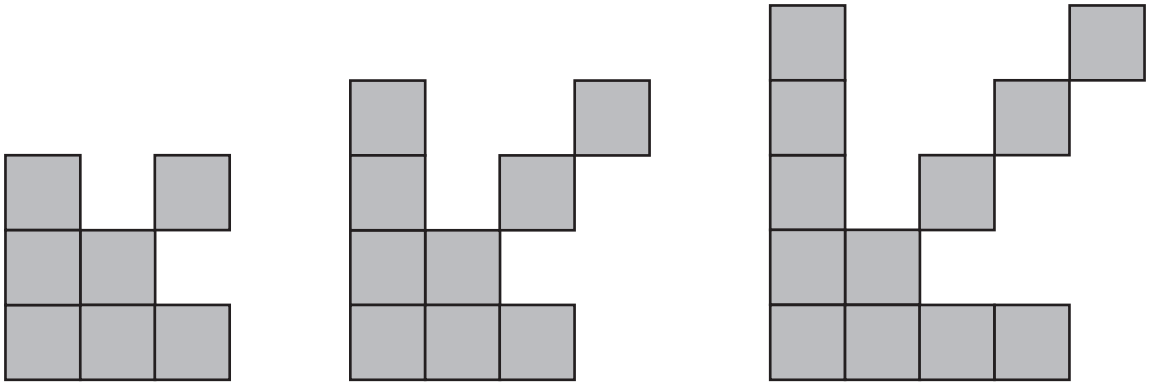
Shape 1 Shape 2 Shape 3

Here is the third shape in a growing pattern.
What do you notice about the way the shape is made?
How many squares make up Shape 20 in the pattern? Explain how you know.



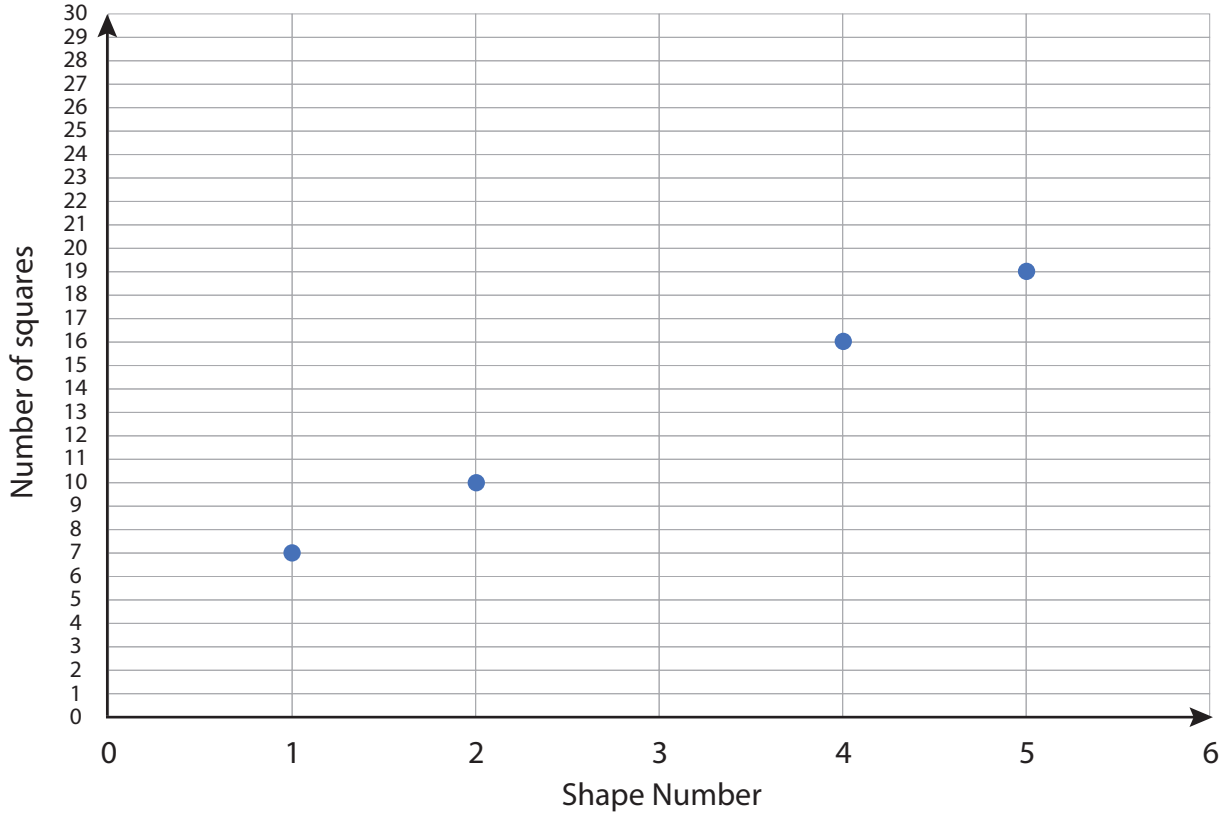
Shape 3

Here is a graph of a growing pattern of shapes.
Draw points to show the number of squares that make up shapes 3 and 6.
What patterns do you see in the graph?

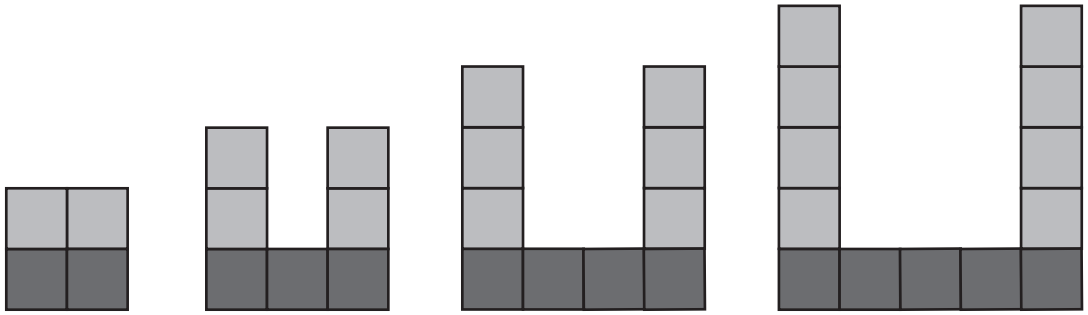


Shape 1 Shape 2 Shape 3

Shape Pattern

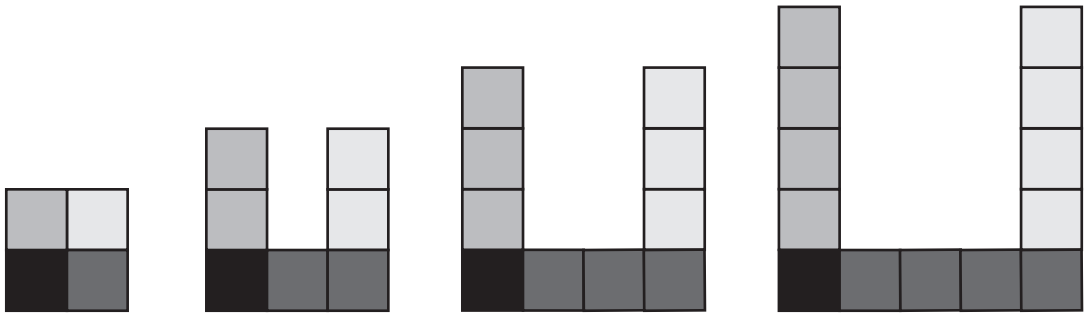


Leeana, Cody, and Prakesh create their own rules for the number of squares of any shape in the pattern. They use n to represent the shape number.
Leeana pictures the pattern like this and writes her rule as (n + 1) + 2n.



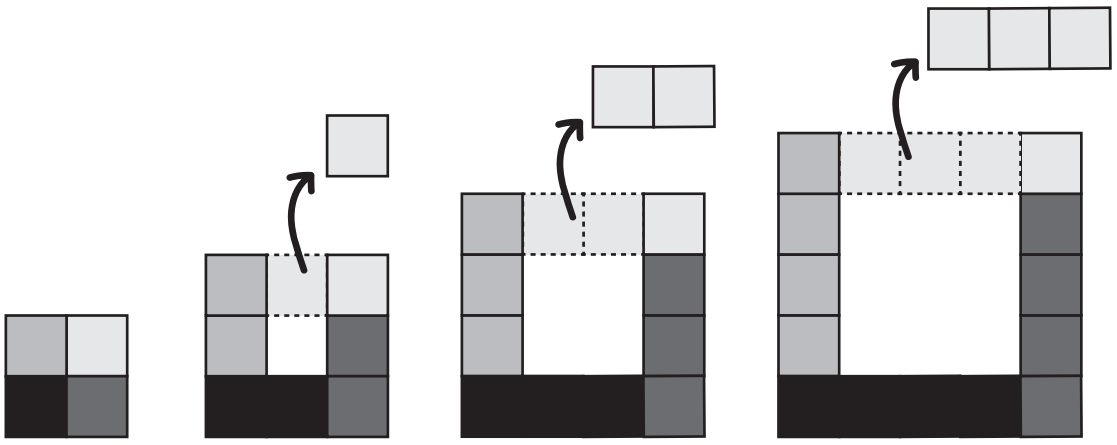
Shape 1 Shape 2 Shape 3 Shape 4

Write Cody and Prakesh's rules as algebraic expressions.
Cody pictures the pattern like this:



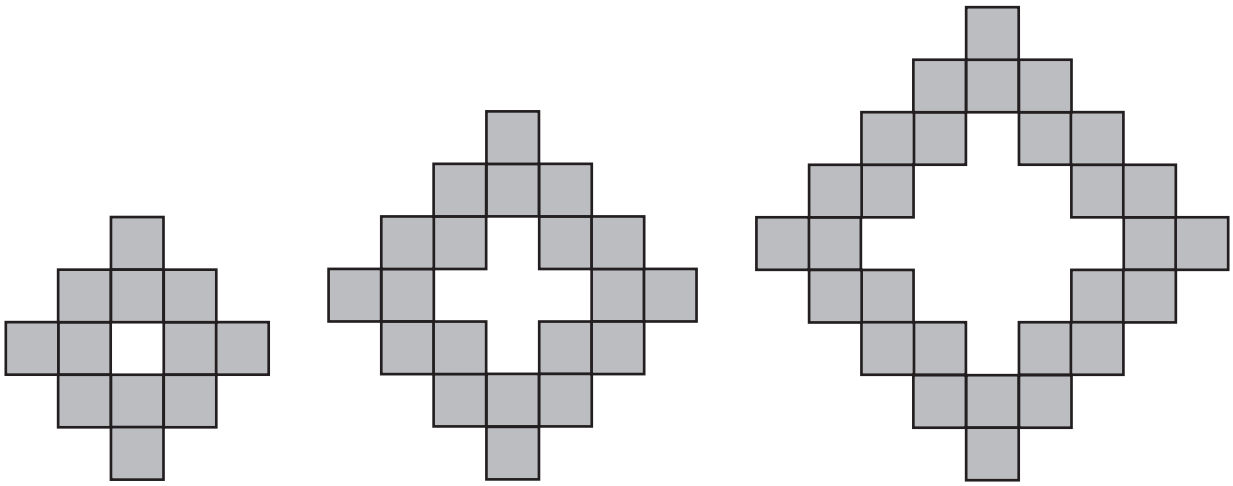
Shape 1 Shape 2 Shape 3 Shape 4

Prakesh pictures the pattern like this:



Shape 1 Shape 2 Shape 3 Shape 4

If you use 100 squares, what is the largest numbered shape in this pattern you can make?



Shape 1 Shape 2 Shape 3