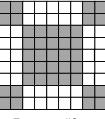# Sidewalk Patterns

In Prague some sidewalks are made of small square blocks of stone.
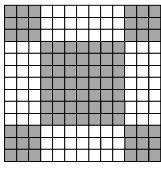
The blocks are in different shades to make patterns that are in various sizes.
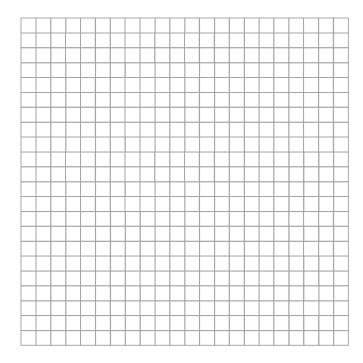
Pattern #1

Pattern #2

Pattern #3

Draw the next pattern in this series.

Pattern #4

Sidewalk Patterns

1. Complete the table below

Pattern number, n	1	2	3	4
Number of white blocks	12	40		
Number of gray blocks	13			
Total number of blocks	25			

2. What do you notice about the number of white blocks and the number of gray blocks?

_____

3. The total number of blocks can be found by squaring the number of blocks along one side of the pattern.

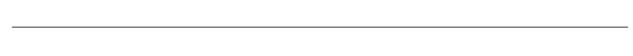   a. Fill in the blank spaces in this list.

   $25 = 5^2$ $81 =$ _____ $169 =$ _____ $289 = 17^2$

   b. How many blocks will pattern #5 need? _____

   c. How many blocks will pattern #n need? _____

4. a. If you know the total number of blocks in a pattern you can work out the number of white blocks in it. Explain how you can do this.

   _____

   _____

   b. Pattern # 6 has a total of 625 blocks.
      How many white blocks are needed for pattern #6? _____
      Show how you figured this out.

Sidewalk Patterns