The Arch Problem

Look carefully at the figures below.

 First Figure Second Figure Third Figure

1. Sketch the next two figures.

2. Complete the table below.

|  |  |
| --- | --- |
| **Figure Number** | **Number of Squares** |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |

3. In a few sentences, describe what the tenth figure would look like.

4. Explain the steps you would take to figure out the number of squares in the 99th figure.

5. In a few sentences, write a way to describe how you could figure out how many squares there are at any stage in the pattern.

6. Which figure will have 175 squares in it?