

The following diagrams represent the first four figures of a pattern. How many unit squares are there in the 5th figure? How many in the 10th figure? How many in the n th figure?

Figure 0

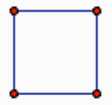


Figure 1

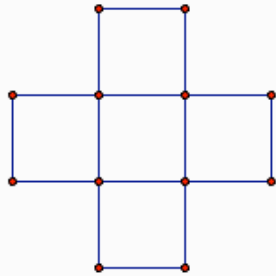


Figure 2

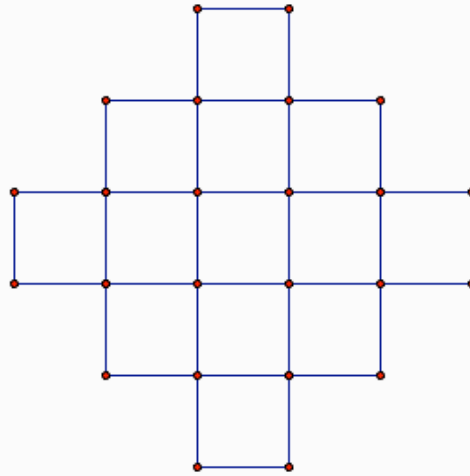
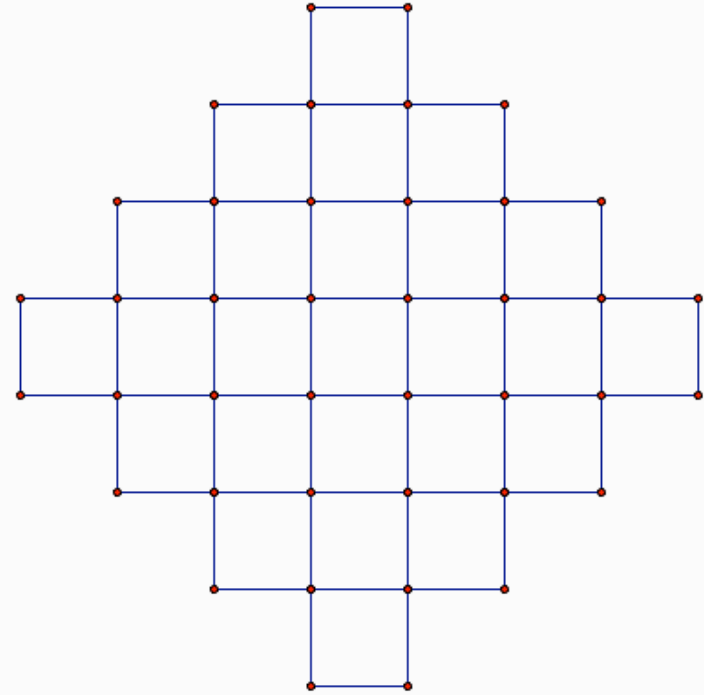


Figure 3



What happens if we look at the number of sticks necessary to make each of these? How many sticks will be needed for the 5th figure? What about the 10th figure? And finally, how many will you need for the n th figure?

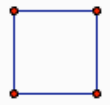
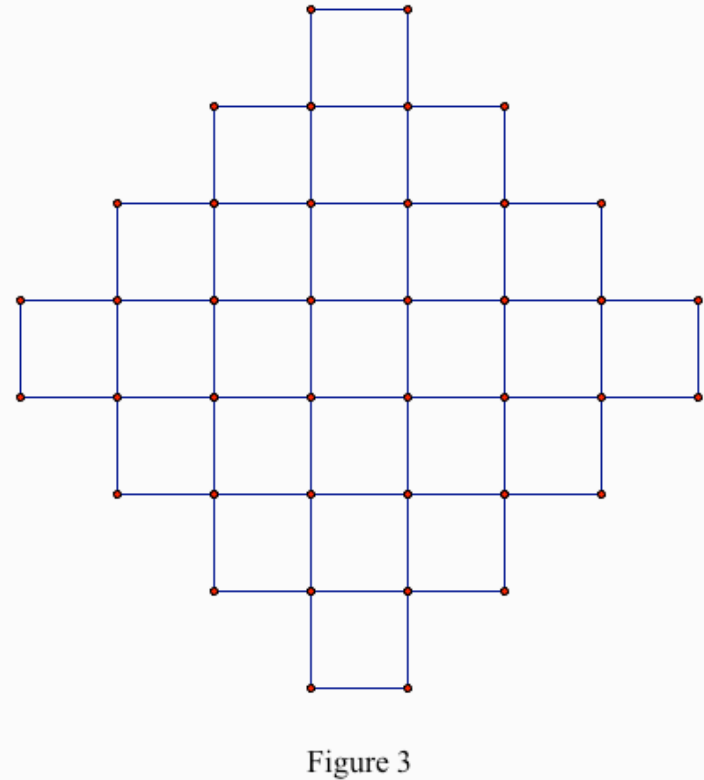
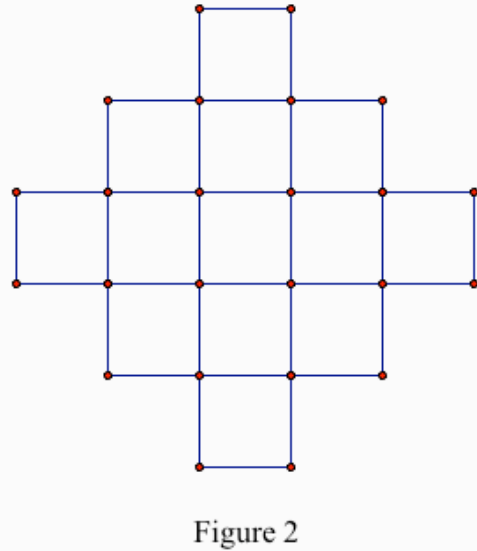
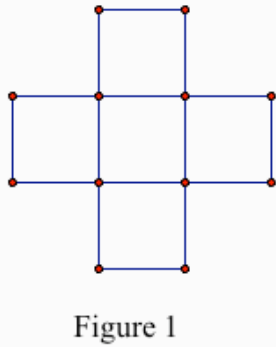


Figure 0



Let's count the perimeter of these steps. How many sticks will be needed for the 5th figure? What about the 10th figure? And finally, how many will you need for the nth figure?

Figure 0

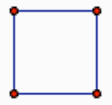


Figure 1

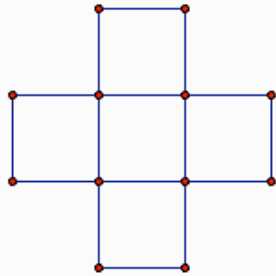


Figure 2

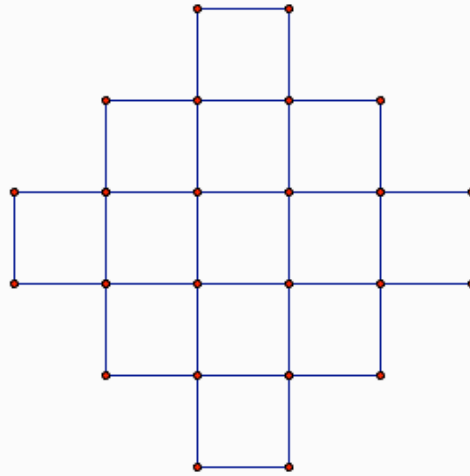
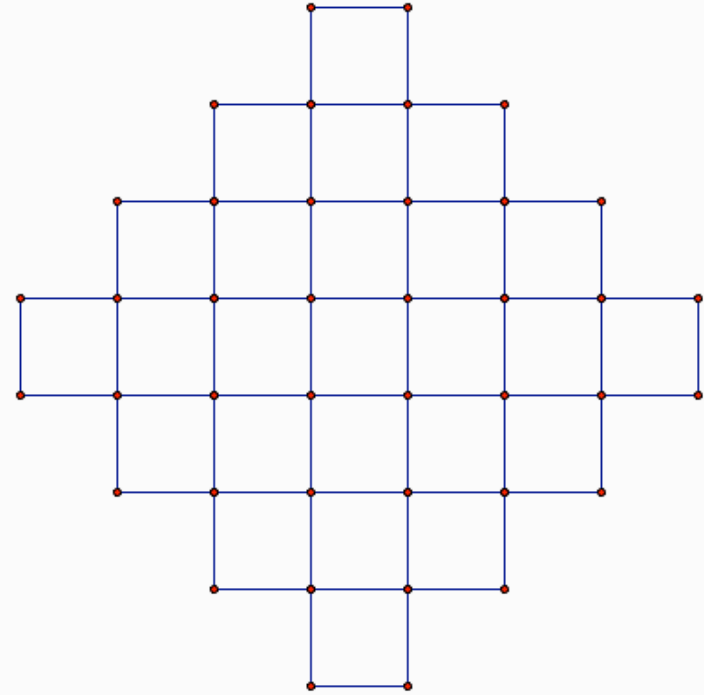


Figure 3



Counting the vertices, how many dots are needed for each figure? How many vertices will be needed for the 5th figure? What about the 10th figure? And finally, how many will you need for the nth figure?

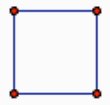


Figure 0

