**The Matchsticks Problem**

Ryan is building matchstick square sequences as shown below.



How many squares are there in the 4th figure? 5th figure? 10th figure? 100th figure? nth figure?

How many matchsticks will he use for the 4th figure? 5th figure? 10th figure? 100th figure? nth figure?

Source: Billstein, R., Libeskind, S., & Lott. J. (2010). *A Problem Solving Approach to   
 Mathematics for Elementary School Teachers* (10th edition). Boston, MA:   
 Pearson/Addison Wesley.