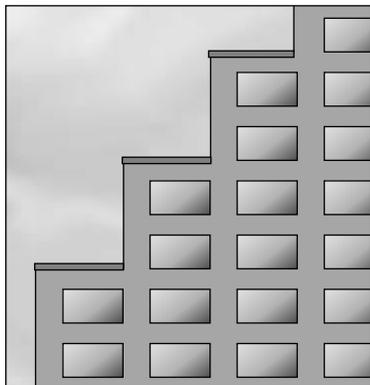


**11-2 Word Problem Practice****Arithmetic Series**

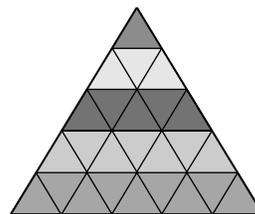
- 1. WINDOWS** A side of an apartment building is shaped like a steep staircase. The windows are arranged in columns. The first column has 2 windows, the next has 4, then 6, and so on. How many windows are on the side of the apartment building if it has 15 columns?



- 2. WEIGHTS** Nathan has a collection of barbells for his home gym. He has 2 barbells for every 5 pounds starting at 5 pounds and going up to 80 pounds. What is the total weight of all his barbells?
- 3. TRAINING** Matthew is training to run a marathon. He runs 20 miles his first week of training. Each week, he increases the number of miles he runs by 4 miles. How many total miles did he run in 8 weeks of training?

- 4. VOLUNTEERING** Maryland Public Schools requires all high school students to complete 75 hours of volunteer service as a condition for graduation. One school includes grades 1-12, with 50 students in each grade. The school decides that students in grade  $g$  will volunteer  $0.25g$  hours per week of their time. How many hours will all the school's students collectively donate to charity each week?

**TRIANGLES** For Exercises 5-7, use the following information.



A triangle is made of congruent equilateral triangles as shown in the figure.

- 5.** Starting from the top, each colored row of triangles has more and more triangles. Write a formula for the number of triangles in row  $n$ .
- 6.** If the large triangle consists of  $N$  rows of small triangles, how many small triangles are there in the large triangle? Write your answer using sigma notation.
- 7.** Evaluate the sum you wrote for Exercise 6.