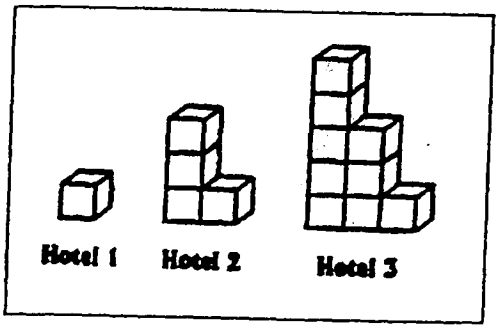
3. Paul is a window designer. A store manager asked him to create a triangular display of balloons, with 1 on top, 2 in the next row, 3 in the next row and so on. How many balloons does Paul need for a triangle 10 rows high?

4. The manager of the store also wants Paul to make a display inside the store that is 40 rows high. How many balloons does Paul need for this display?

Exercises:

1. Building Hotels:
   Sketch the next two hotels in the pattern.



a) Make a table of ordered pairs of numbers: a) hotel number b) number of blocks in the hotel.

b) Write a description of the pattern.

c) Without extending the pattern, predict the number of blocks in the tenth hotel in the pattern.

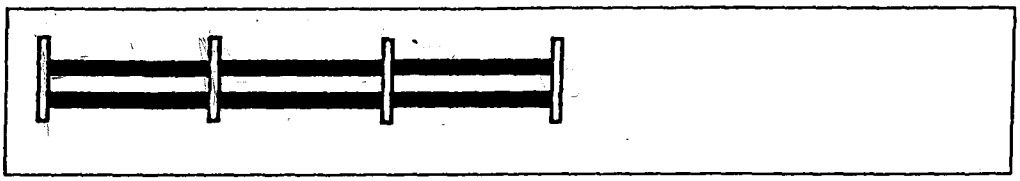
d) Graph the above pairs of numbers and join the points with a line.

e) Draw a sketch of the tenth hotel.

f) What is the relationship between the hotel number and the number of blocks in the hotel?

g) From the graph, determine how many hotels can be made from 28 blocks.

2. Given the following diagram of fence posts and boards, extend the diagram by 2 posts.



a) Construct a chart showing the number of boards required for a given number of posts.

Number of fence posts:	2	3	4	5	6	7	8	N
Number of fence boards:	2	4	6					

b) How many boards do you need to construct a fence with 12 posts? With 100 posts? Write a mathematical sentence that calculates the number of boards needed for any number (N) of posts.