

Equations and Problem Solving

Exploring Equations

These problems are more difficult. Find a pattern for solving them.

4. Twelve Days of Christmas

In the song, "The Twelve Days of Christmas" the total number of gifts received is a triangular number.

- a) On the first day there was 1 gift
- b) On the second day there were 2 new gifts
- c) On the third day there were 3 new gifts, etc., until the 12th day.
 - How many gifts were received on the 12th day?
 - What is the total of gifts received during all 12 days?
 - Why is this number a triangular number?



5. Handshakes

One hundred people shake hands.
How many handshakes take place?



6. Tower of Offices

The Alamo Construction Company is building a tower like this. Each square represents an office. There will be:

- a) One office on the top floor
- b) Two offices on the second floor
- c) Three on the 3rd, etc.
 - Using this plan is it possible to have exactly 34 offices?
 - If this plan is used to build a tower with 22 floors, how many office will there be?

