

Playing with Pattern Problems and Puzzles

(1) In a restaurant, a square table can fit 1 chair on each side. A larger table can be made by putting tables together on one edge, forming a long rectangle. For example, two tables can fit 6 chairs.

(a) How many chairs can fit around a long table made up of 10 square tables?

(b) Write an algebraic expression which gives the number of chairs, C , that can fit around a long table made up of T square tables?

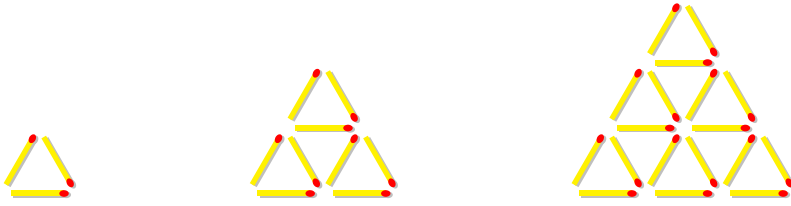
(2) Jordan is exploring a pattern shown below:

n	1	2	3	4	...
t_n	11	19	27	35	...

(a) What should the 10th number be?

(b) Write an algebraic expression which gives the value of the n th term, t_n .

(3) Consider the following pattern of 3 figures:



(a) How many small triangles (made up of 3 matchsticks) are in the 10th figure?

(b) How many **matchsticks** are in the 10th figure?

(c) Write an algebraic expression which gives the number of small triangles in the n th figure.

(d) Write an algebraic expression which gives the number of **matchsticks** in the n th figure.