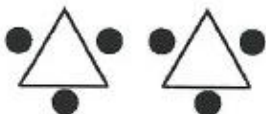




1. A restaurant has triangular tables. Each table seats 3 customers.



1 table  
3 customers



2 tables  
6 customers



3 tables  
9 customers

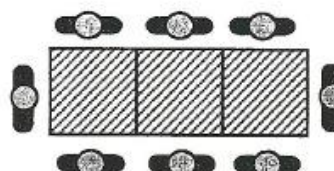
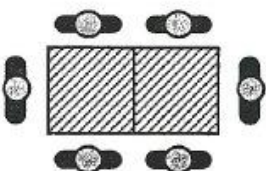
(a) Copy and complete the table :-

No. of Tables ( $T$ )	1	2	3	4	5	6
No. of Customers ( $C$ )	3	6	9	?	?	?

$\underbrace{\hspace{1.5cm}}_3$      $\underbrace{\hspace{1.5cm}}_3$      $\underbrace{\hspace{1.5cm}}_3$

- (b) For every extra table, how many extra customers are there ?
- (c) Copy and complete : - " number of Customers = ..... x number of Tables "
- (d) Write down a formula using symbols to show this. ( $C = \dots \times \dots$ ).

2. A school dining room is laid out as shown.



- (a) Draw neatly the next table pattern with 4 square tables.
- (b) Copy and complete the following table :-

No. of tables ( $T$ )	1	2	3	4	5	6
No. of pupils ( $P$ )	4	6	8	?	?	?

$\underbrace{\hspace{1.5cm}}_2$      $\underbrace{\hspace{1.5cm}}_2$      $\underbrace{\hspace{1.5cm}}_?$



- (c) For every extra table, how many extra pupils can be seated ?
- (d) Write down the formula using **symbols** for calculating the number of pupils that can be seated if you know the number of tables :-

copy :-  $P = ? \times T + ?$  ← remember the correction number

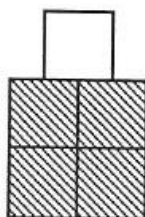
- (e) Use your formula to decide how many pupils can be seated with 12 tables.
- (f) How many pupils can be seated with 50 tables ?



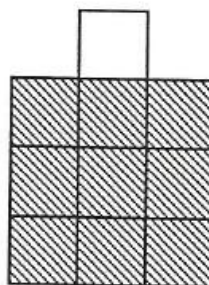
3. A boy uses building blocks to make these patterns.



Pattern No. 1  
Blocks - 2



Pattern No. 2  
Blocks - 5



Pattern No. 3  
Blocks - 10

- (a) Draw the above 3 patterns and add pattern numbers 4 and 5.
- (b) Copy and complete this table.

Pattern No. (N)	1	2	3	4	5	6	7	8	9
Blocks (B)	2	5	10	?	?	?	?	?	?

- (c) Write down a formula linking the pattern number (N) with the number of Blocks (B).

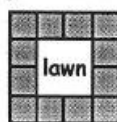
4. Look at this pattern of square garden slabs surrounding a square lawn.

pattern 1



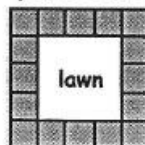
8 slabs

pattern 2



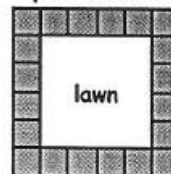
12 slabs

pattern 3



? slabs

pattern 4



? slabs

- (a) How many slabs are needed for patterns number 3 and 4 ?
- (b) Draw pattern 5 and say how many slabs are needed.
- (c) Can you see that  
 Pattern 1  $\Rightarrow 3^2 - 1^2 = 9 - 1 = 8$  ?  
 Pattern 2  $\Rightarrow 4^2 - 2^2 = 16 - 4 = 12$  ?

Express each of the next 3 patterns in the same way.

- (d) Use this to find how many slabs are needed for :-  
 (i) pattern 10      (ii) Pattern 20.

