

Extending a pattern and determining its formula

1. For their barbeque Mr and Mrs Goldie allowed 2 burgers for each person attending and an extra 8 to be on the safe side.

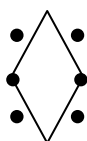
- (a) Complete this table for the numbers of burgers they would need: [4]



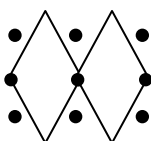
Number of people attending (n)	1	2	3	4	5	6	10	15	20
Number of burgers required (b)									

- (b) Find a formula for the number of burgers for 'n' people attending the barbeque. [2]
- (c) How many burgers would be needed for a barbeque with 23 people attending? [2]

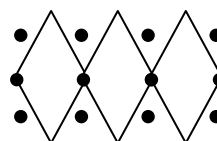
2. A pattern is built up as shown in this diagram:



Pattern 1
1 Diamond
6 Beads



Pattern 2
2 Diamonds
9 Beads



Pattern 3
3 Diamonds
12 Beads

- (a) Complete the table for the number of diamonds and number of beads in other patterns. [2]

Number of Diamonds	1	2	3	4	5		12
Number of Beads	6	9	12				

- (b) Write down a rule, in symbols, for finding the number of beads needed for any number of diamonds. [2]
- (c) Jasper has 57 beads, how many diamonds would he need to use up all of the beads? [2]

[14 marks]