2.13-2 Sequences and Patterns: Practice Set 2: 10-minute Pack

Total Marks

GL ASSESSMENT GL · Calculators not allowed · about 10 minutes

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 A sequence begins 120, 112, 104, 96, ...

(a) Write down the next two terms of the sequence. **(2)**

.....

(b) Find the 12th term of the sequence. **(2)**

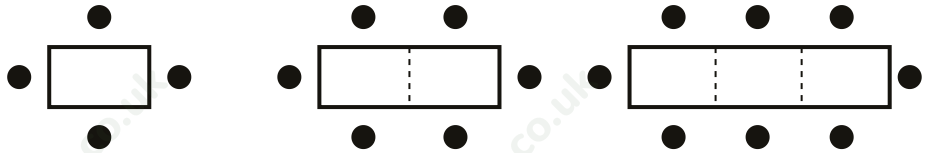
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2 A cafe pushes small square tables together in a row to seat a group. One table on its own seats 4 people. Two tables pushed together in a row seat 6 people. Three tables pushed together in a row seat 8 people. The table below shows the number of chairs used.

Number of tables: 1, 2, 3, 4, 5

Chairs: 4, 6, 8, ?, ?



Pattern 1
4 chairs

Pattern 2
6 chairs

Pattern 3
8 chairs

(a) Complete the table for 4 tables and 5 tables. **(2)**

(b) Describe, in words, the rule connecting the number of tables and the number of chairs. **(1)**

3 Which number continues the sequence?

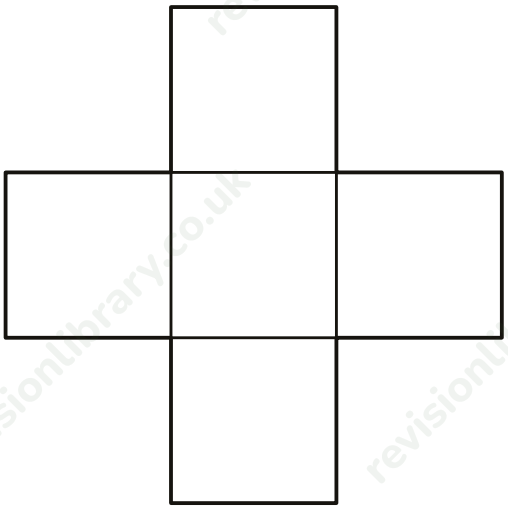
100, 91, 82, __, 64

- ☐ A) 70
- ☐ B) 71
- ☐ C) 72
- ☐ D) 73

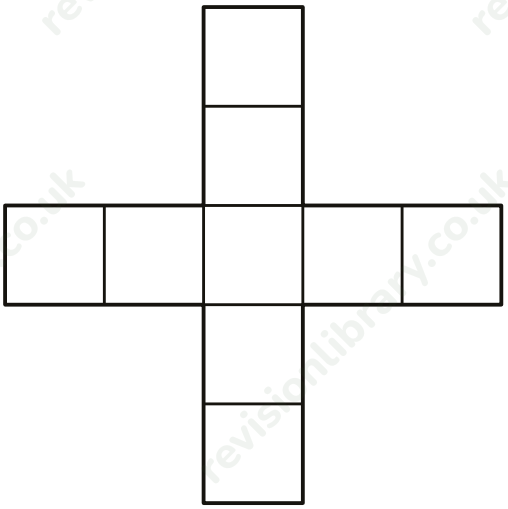
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4 A pattern of tiles is arranged in a plus (cross) shape. Pattern 1 uses 5 tiles, pattern 2 uses 9 tiles and pattern 3 uses 13 tiles.

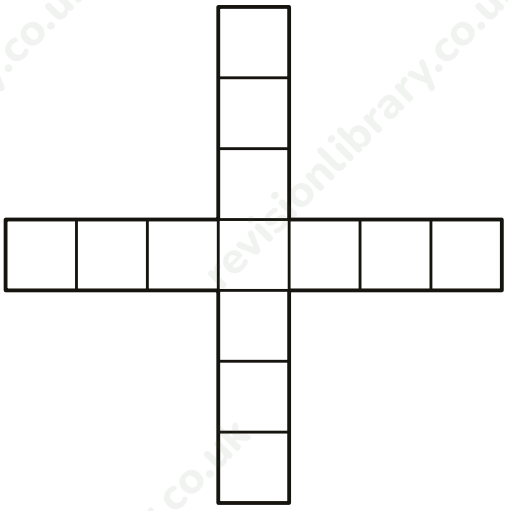
Pattern 1 (5 tiles)



Pattern 2 (9 tiles)



Pattern 3 (13 tiles)



(a) Find the number of tiles in pattern 7. **(2)**

.....

(b) Find the pattern number that has exactly 57 tiles. **(2)**

.....

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Mark scheme · 2.13-2 Sequences and Patterns: Practice Set 2: 10-minute Pack

Question 1

(a) 88 oe **B1**

(a) 80 oe **B1**

(a) Answer: 88, 80

(b) valid method, e.g. nth term = 128 - 8n, or systematic continuation to the 12th term **M1**

(b) 32 cao **A1**

(b) Answer: 32

Question 2

(a) 10 **B1**

(a) 12 **B1**

(a) Answer: 10, 12

(b) oe, e.g. start at 4 and add 2 for each extra table, or double the number of tables and add 2 **B1**

(b) Answer: Start at 4 and add 2 for each extra table (number of chairs = 2 x number of tables + 2)

Question 3

D) 73 **B1**

Answer: D) 73

Question 4

(a) nth term 4n + 1 identified, or valid continuation to pattern 7 **M1**

(a) 29 cao **A1**

(a) Answer: 29

(b) sets 4n + 1 = 57 and attempts to solve **M1**

(b) 14 cao **A1**

(b) Answer: Pattern 14

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