Department of Computer Science and Engineering,
Anna University, Chennai- 600025

CS23101– COMPUTATION THINKING

Practical
Aug-Dec 2026
Year/Sem/Batch: I/I/P

Exercise: 3	Understanding Data and Pattern Recognition	25-09-2026

Question 1

Number and Letter Series: Find the number or letter that should come next (or fill the blank) in each series. (For more pattern puzzles : Pattern Puzzles: Free Sequence & Pattern Recognition Games | ThePuzzleLabs)

i. 58, 52, 46, 40, 34,
   a. 26 b. 28 c. 30 d. 32

ii. 1.5, 2.3, 3.1, 3.9,
   a. 4.2 b. 4.4 c. 4.7 d. 5.1

iii. 13, 29, 15, 26, 17, 23, 19,
   a. 21 23 b. 20 21 c. 20 17 d. 25 27 e. 22 20

iv. 664, 332, 340, 170, __ , 89
   a. 85 b. 97 c. 109 d. 178

v. U32, V29, __ , X23, Y20
   a. W26 b. W17 c. Z17 d. Z26

vi. DEF, DEF2, DE2F2, __ , D2E2F3
   a. DEF3 b. D3EF3 c. D2E3F d. D2E2F2

Question 2

Pattern Completion: Study the pattern of symbols or pictures and choose the option that logically completes it.

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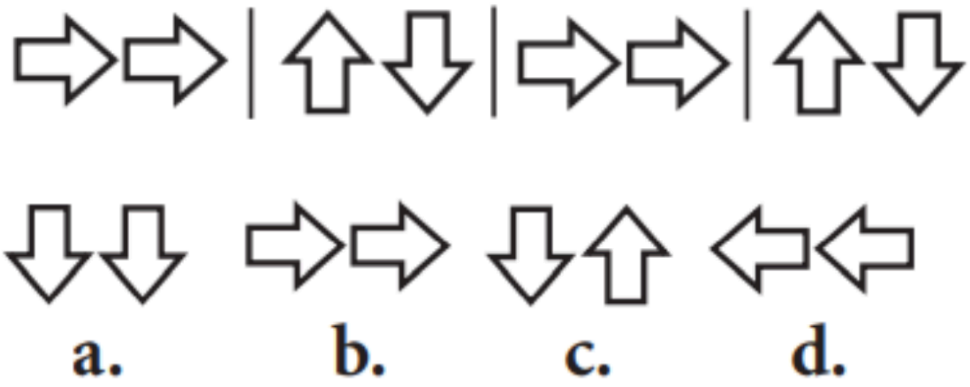
i.



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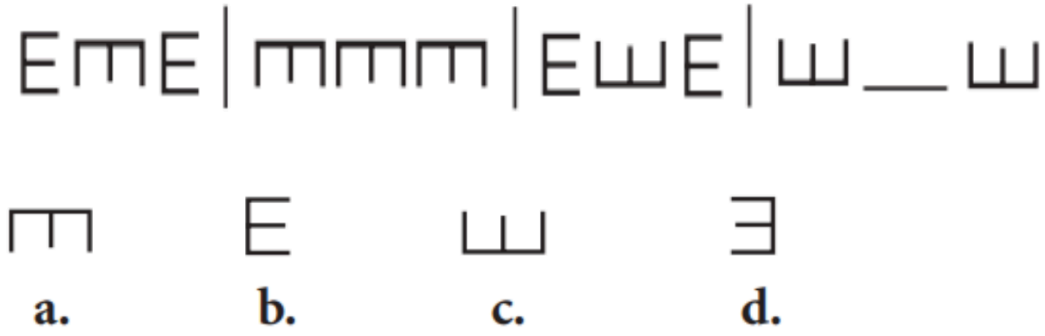

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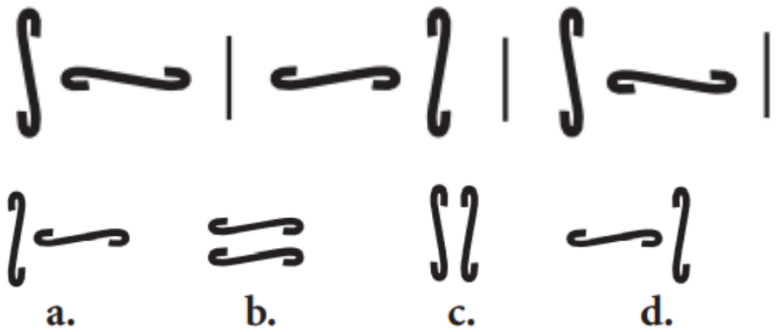

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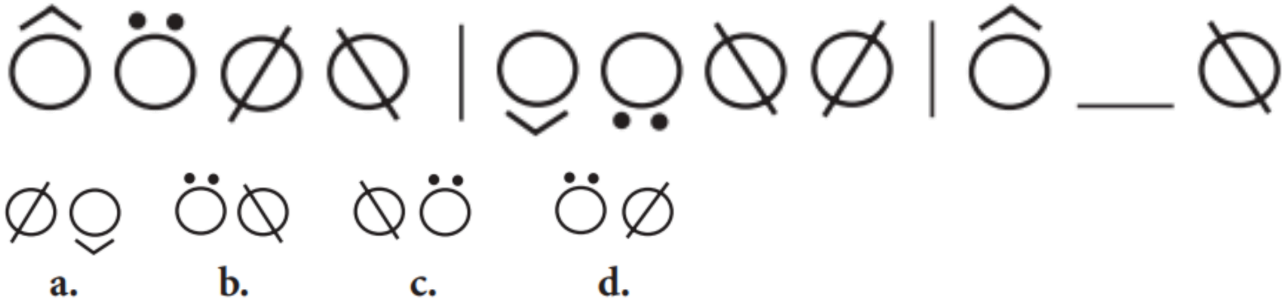

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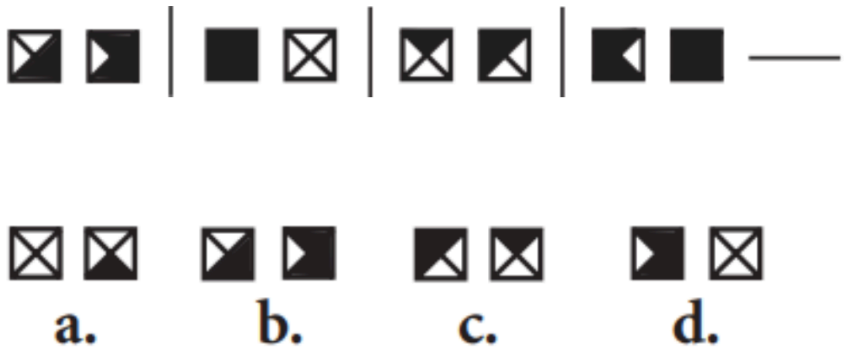

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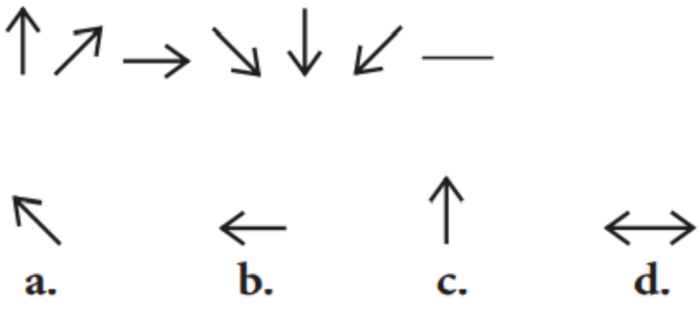

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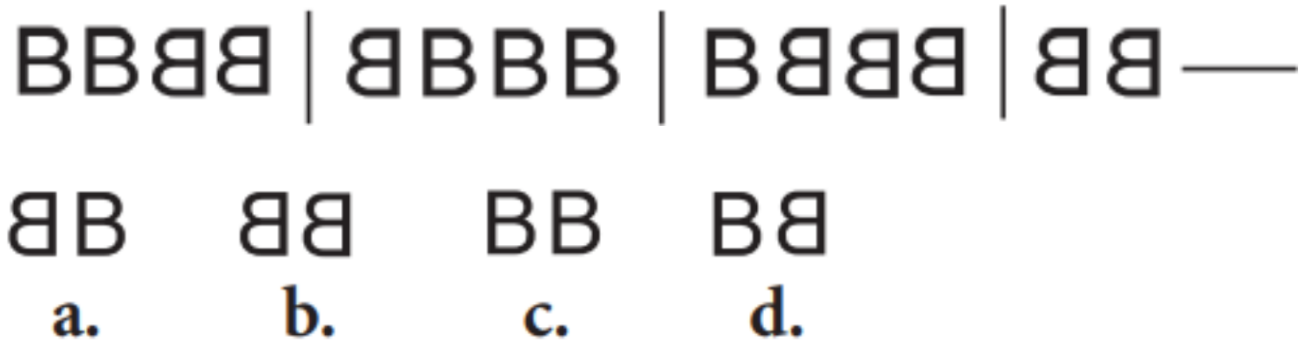

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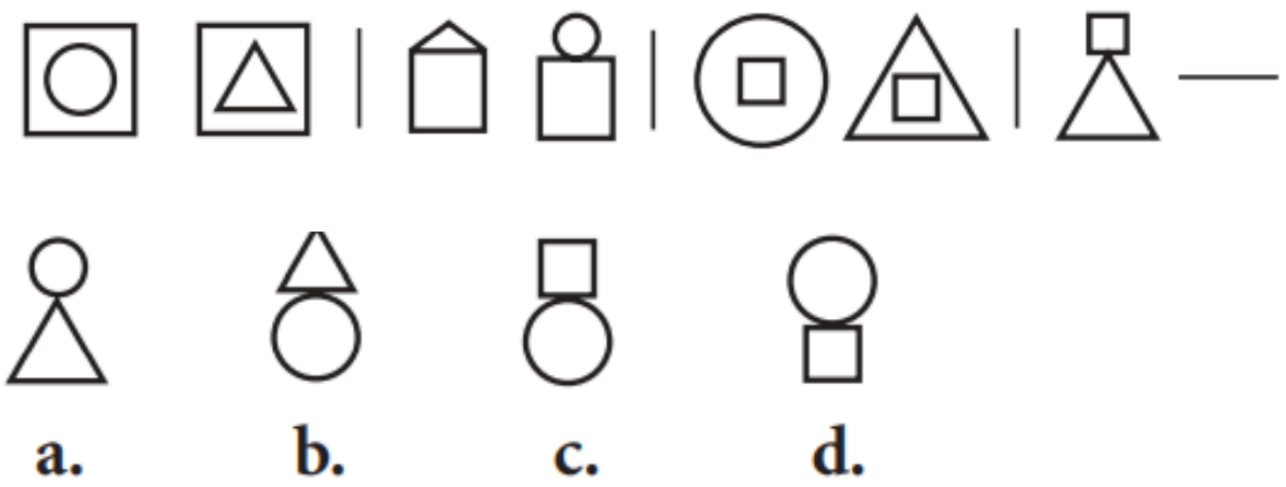
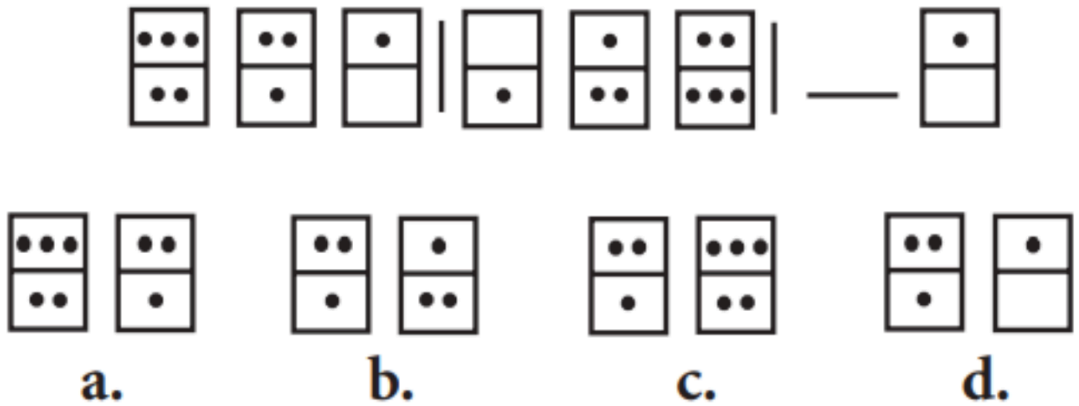


ix.



Number/Cut Hive Puzzles

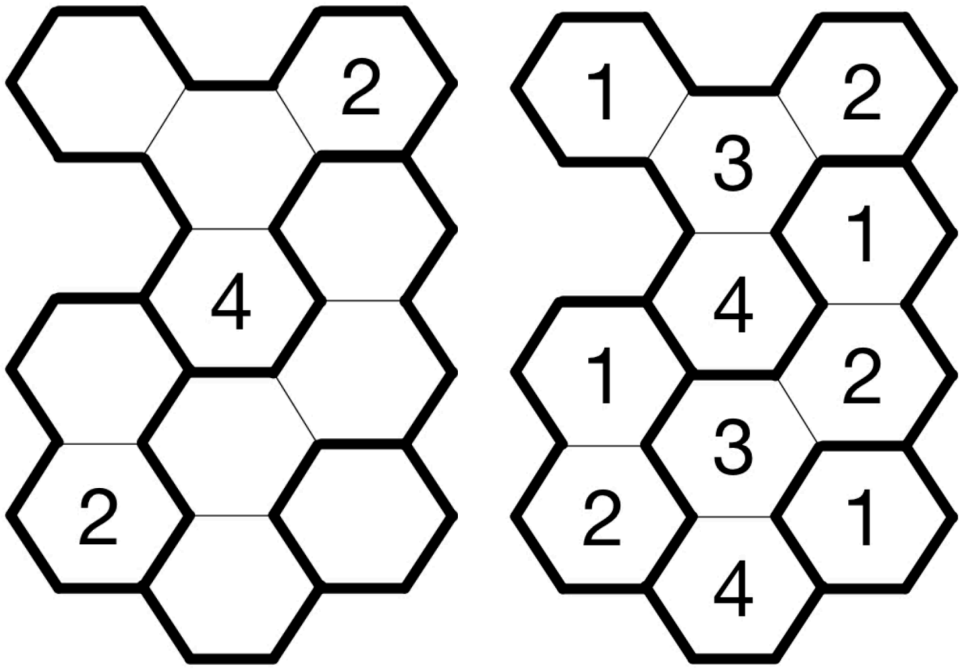
Number hive or cut hive puzzles are hexagonal grid-based logic challenges designed to teach computational and logical thinking

They are inspired by the ‘Cut Block’ puzzles of Japanese puzzle inventor Naoki Inaba. A Cut Hive puzzle consists of a block of hexagons, the ‘hive’, with different areas marked out using thicker lines.

The rules are:

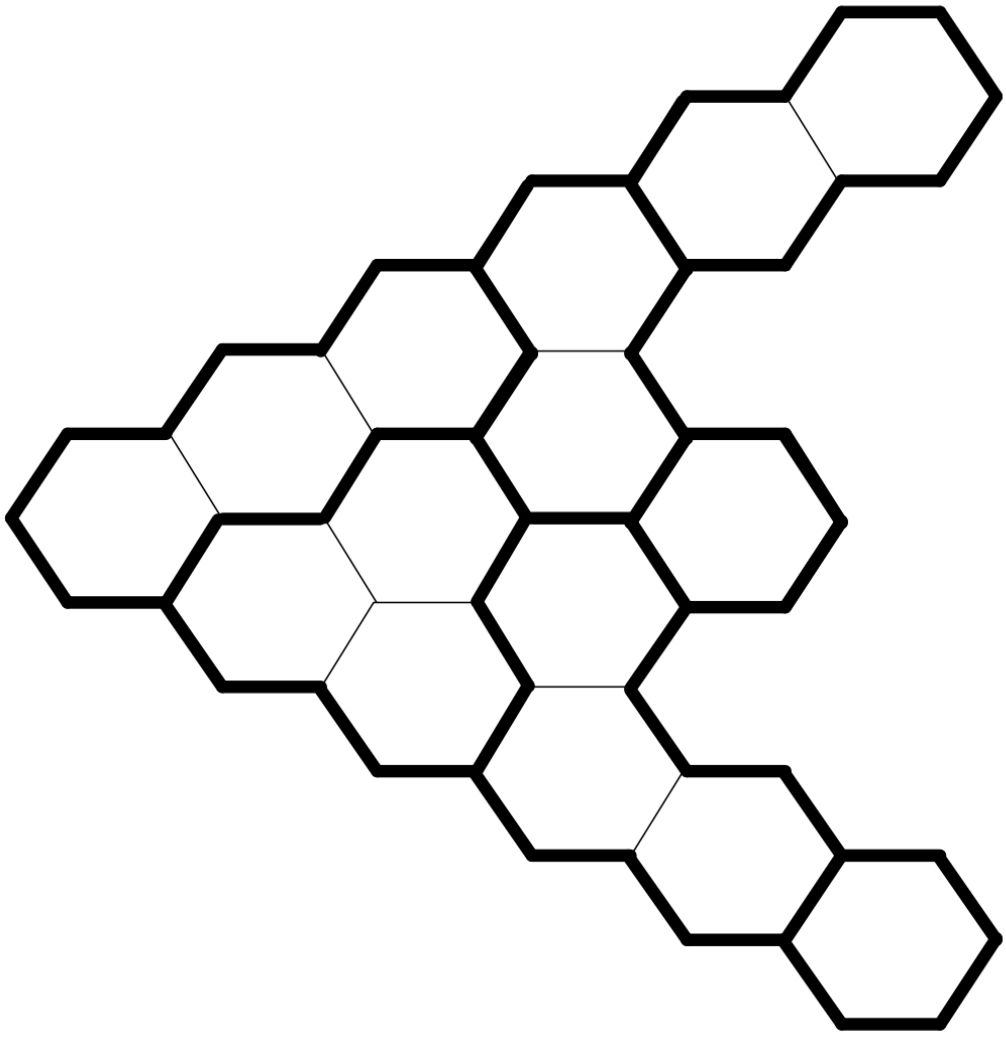
- **Zone Numbers:** Each area must contain the numbers from 1 up to the number of hexagons in the area. For example, the topmost area in the puzzle below consists of 4 hexagons so those hexagons must be filled with the numbers: 1, 2, 3 and 4 with no repeated numbers. If the area has two hexagons, like the one bottom left below, then it must be filled with the numbers 1 and 2.
- **No Neighbors:** No number can be next to the same number in any direction, along a shared edge. So in the grid below, the fact that there is a 4 in the middle means there cannot be a 4 in any of the 5 hexagons surrounding it

Example:



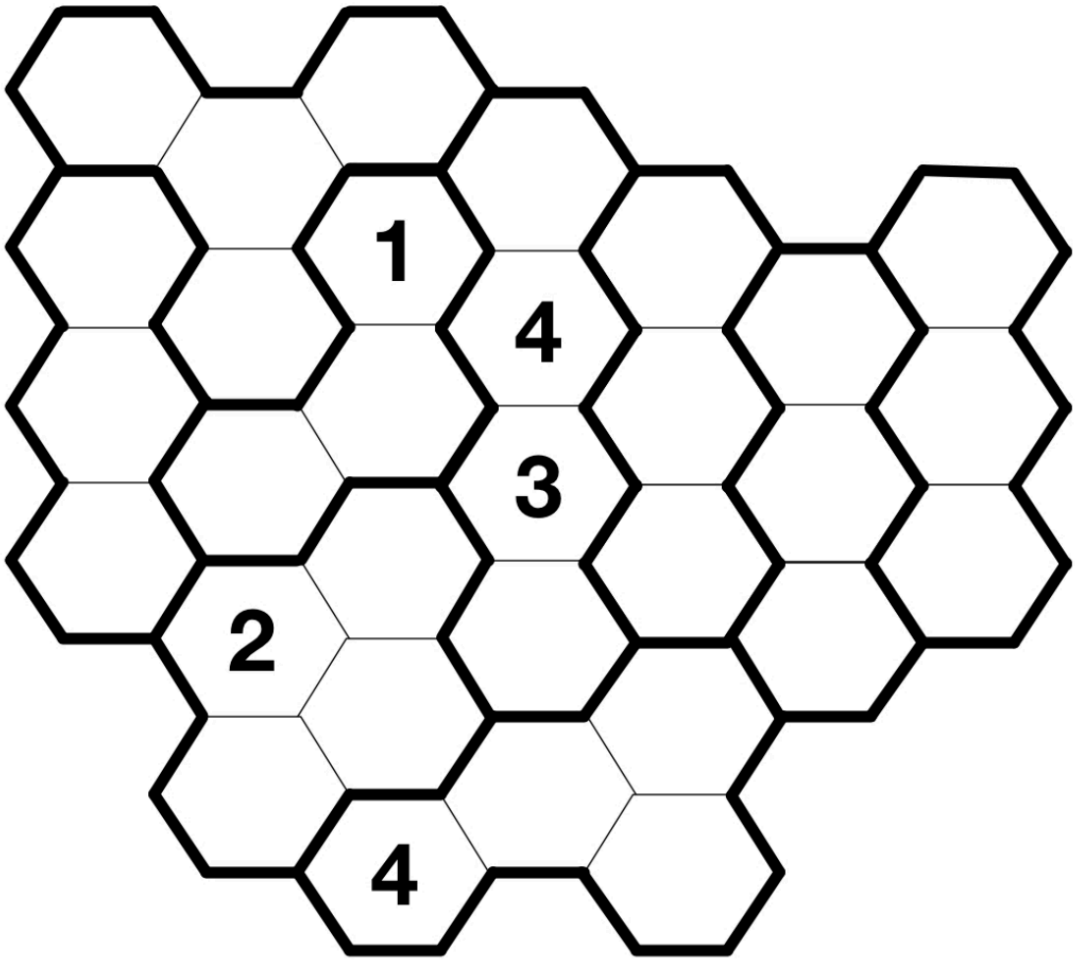
Question 3

Solve the cut hive puzzle.



Question 4

Solve the cut hive puzzle.



Question 5

Word Search: Words can appear horizontally, vertically or diagonally, running backwards or forwards. Different names can cross and overlap. Find the following famous computer scientists' names in the grid below (first and second names may be in different places; spaces, accents and hyphens are not included):

ADA LOVELACE, ANITA BORG, BARBARA LISKOV, DANA ULERY, DOROTHY DENNING, FRAN ALLEN, GRACE HOPPER, JEANNETTE WING, KAREN SPARCK-JONES, MARISSA MAYER, MUFFY CALDER, URSULA MARTIN, WENDY HALL, ALAN TURING, CHRIS STRACHEY, EDGAR CODD, EDSGER DIJKSTRA, JOHN VON NEUMANN, MAURICE WILKES, MOHAMMED AL-KHWARIZMI, NIKLAUS WIRTH, PHILIP EMEAGWALI, SERGEY BRIN, TIM BERNERS-LEE, TONY HOARE, VINT CERF

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	N	K	R	E	C	S	N	I	R	U	T	J	E	A	L	U	S	R	U
2	A	A	E	F	R	E	C	A	C	N	I	U	E	W	V	N	H	O	J
3	M	R	O	M	A	K	B	R	I	T	M	O	R	N	H	F	B	Y	V
4	H	E	A	D	A	L	O	V	E	L	A	C	E	I	M	R	R	S	P
5	C	N	N	I	W	I	R	T	H	O	O	O	P	K	R	A	I	E	H
6	L	S	I	J	P	W	E	N	D	Y	H	A	L	L	E	N	N	R	I
7	E	P	T	K	K	K	N	V	O	K	S	I	L	A	Y	I	F	G	L
8	W	A	A	S	C	H	M	A	U	R	I	S	E	U	A	V	Z	E	I
9	N	R	G	T	A	W	E	E	L	T	R	U	M	S	M	R	S	Y	P
10	O	C	G	R	O	B	G	E	F	A	J	E	A	N	N	E	T	T	E
11	D	K	Y	A	A	N	W	X	G	A	R	D	R	L	A	D	I	M	M
12	R	J	H	G	I	C	O	D	D	A	Z	S	T	O	S	L	M	O	E
13	O	O	T	W	O	O	E	S	O	H	J	G	I	O	S	A	Z	H	A
14	G	N	O	N	T	P	I	H	E	D	S	E	N	P	I	C	I	A	G
15	R	E	R	E	H	R	Y	E	O	B	A	R	B	A	R	A	R	M	W
16	A	S	O	U	H	N	C	I	J	P	D	C	G	K	A	L	A	M	A
17	C	B	D	C	O	I	U	H	E	L	P	M	N	Y	M	M	W	E	L
18	E	O	S	T	R	A	C	H	E	Y	D	E	I	C	R	N	H	D	I
19	L	R	P	U	D	E	N	N	I	N	G	E	R	O	O	E	K	B	P
20	E	N	A	W	S	R	E	N	R	E	B	M	U	F	F	Y	L	R	Q
21	E	M	V	O	N	N	E	U	M	A	N	N	T	D	A	N	A	U	A

Answer format:

Option 1 : Write out the entire word search grid and circle the words you find.

Option 2 : Write your answer as a table with these columns

Word	Start (Row, Col)	End (Row, Col)

For each word you find, fill in one row: the word, the row and column number where it begins, and the row and column number where it ends.

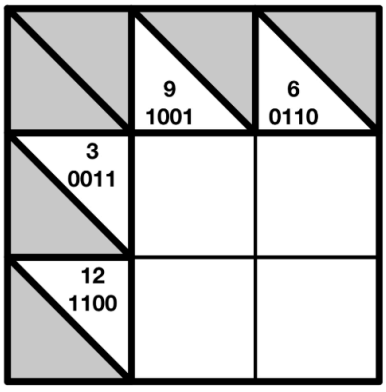
Bakuro

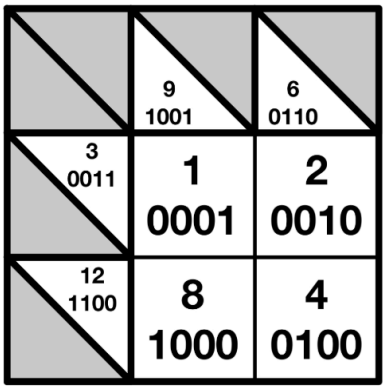
Bakuro is a logic puzzle that plays like a number-based crossword.

Rules :

- Fill the cells with the numbers 1, 2, 4 and 8, together with their binary equivalent.
- Each group of adjacent cells in a row must add up to the number in the clue to its left.
- Each group of adjacent cells in a column must add up to the number in the clue above it.
- No group may contain the same number more than once.

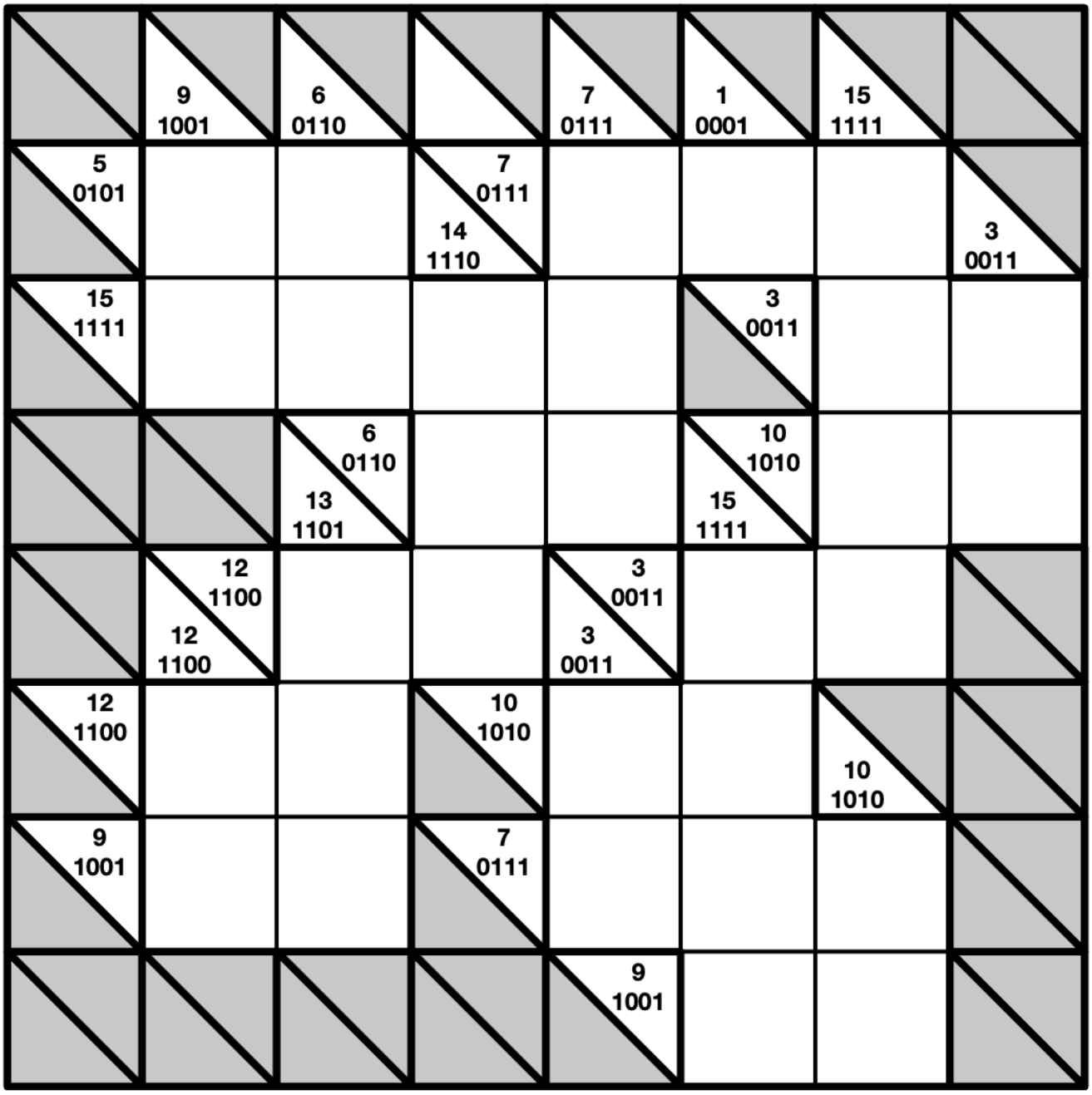
Example:





Question 6

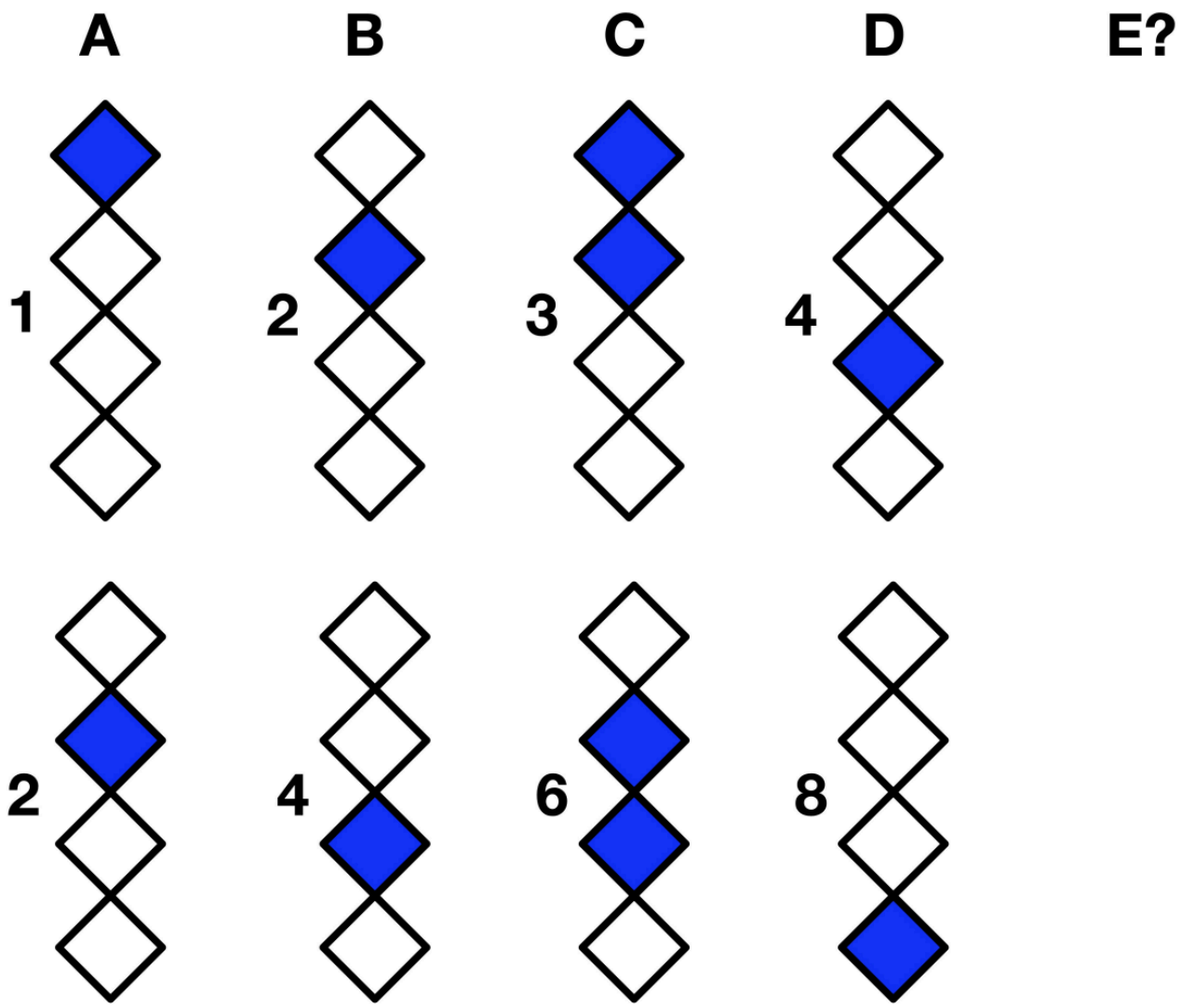
Solve the bakuro puzzle



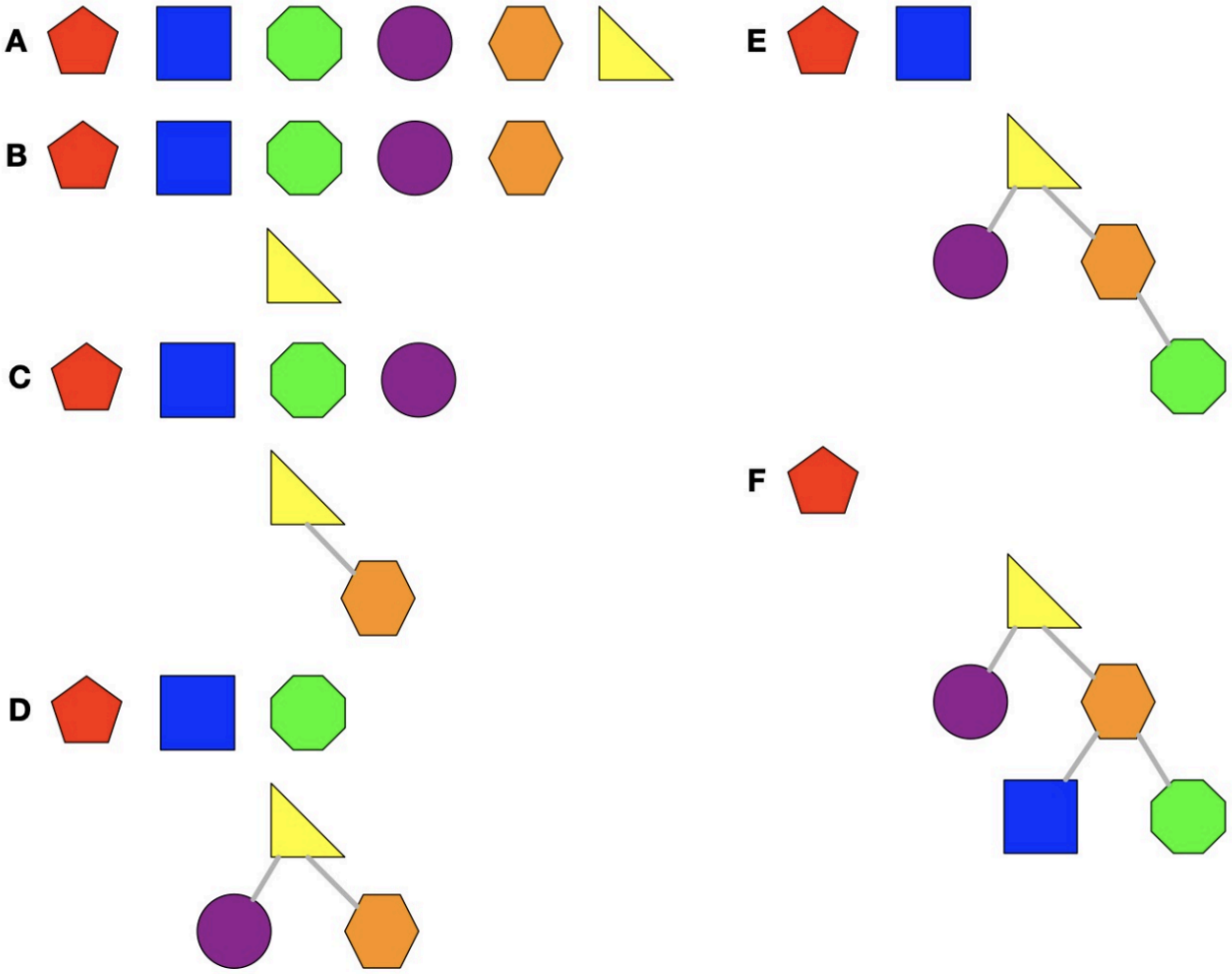
Question 7

Data Pattern: Work out the pattern and so what the missing next pattern in the sequence is.

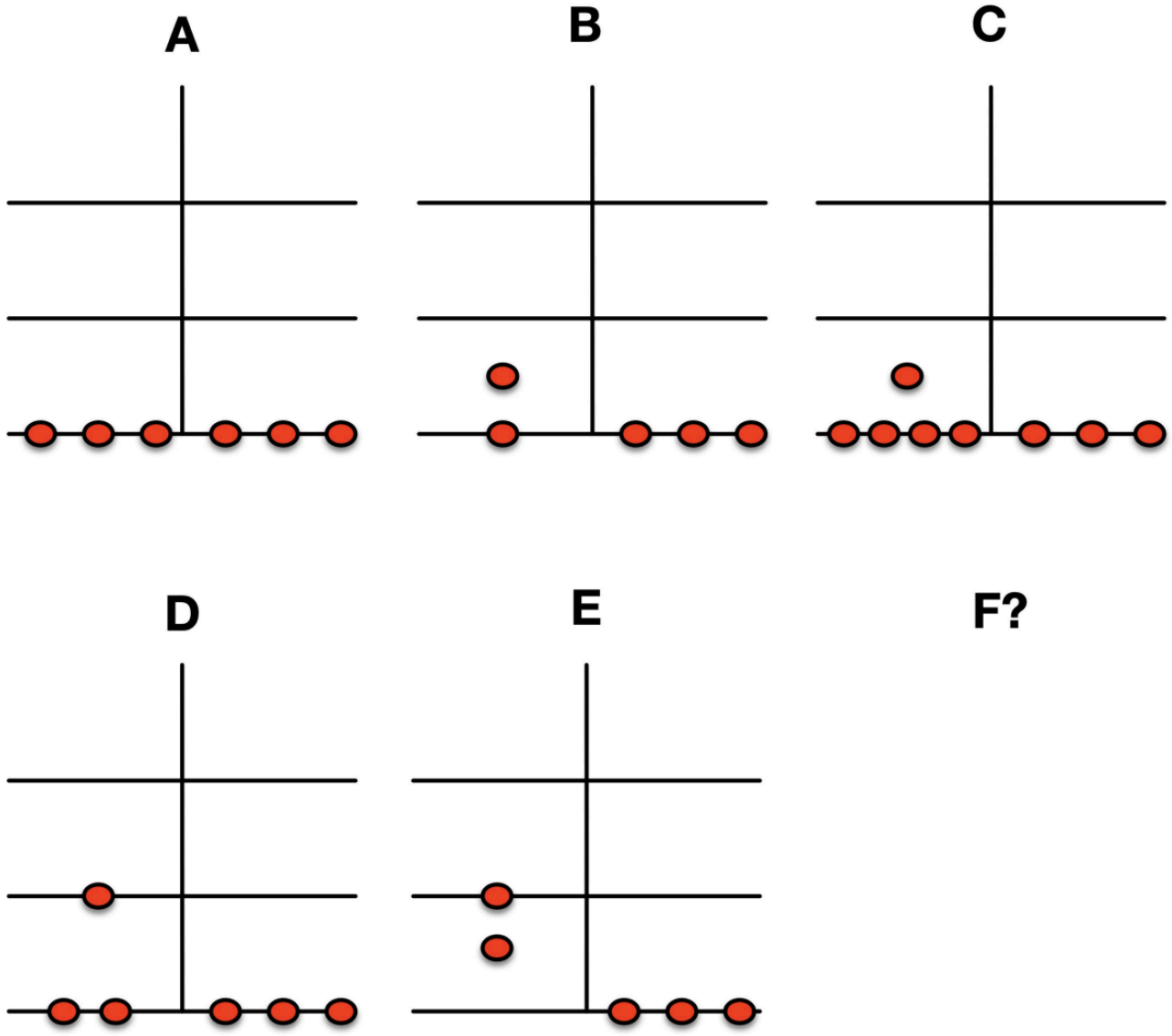
i.



ii.



iii.



Question 8

There are 7 boxes coloured with different colours – White, Blue, Yellow, Green, Red, Brown and Pink. They are placed one above the other, and each contains a different flavoured cupcake – Mint Oreo, Chocolate, Blueberry, Mango, Lemon, Apple Pie and Cranberry, not necessarily in that order.

Further information:

- The box containing either Mango or Cranberry cupcakes is on the top, or first place respectively.
- The brown box is placed 5th from the bottom.
- The boxes containing Chocolate and Apple Pie cupcakes are placed consecutively.
- White and Red coloured boxes contain Mint Oreo and Lemon cupcakes respectively.
- Yellow and Brown boxes are placed at consecutive places.
- The Blue box, which contains Chocolate cupcakes, and the White box have one box between them.
- The Yellow box, which contains a Blueberry cupcake, is placed just above the box containing the Apple Pie cupcake.

i. Which cupcake box is immediately next to the box containing Lemon cupcake?

ii. Which flavoured cupcake does the Brown coloured box contain?

iii. If the box at the lowest place is coloured Green, which coloured box contains Mango cupcakes?

iv. At which position from below is the box containing a Blueberry cupcake?

v. If the topmost box contains Cranberry cupcake, how many boxes are placed between the Chocolate and Cranberry cupcake boxes?