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Exploration Solution

1. **Solution**:
   The possible numbers are

The Digits	**The Numbers**	**Frequency**
$1, 6, 6$	$166, 616, 661$	3
$1, 4, 9$	$149, 194, 419, 491, 914, 941$	6
$2, 2, 9$	$229, 292, 922$	3
$2, 3, 6$	$236, 263, 326, 362, 623, 632$	6
$3, 3, 4$	$334, 343, 433$	3

   Scoring:

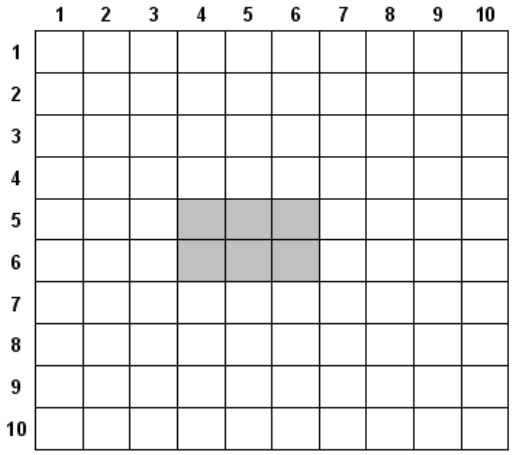
The total Numbers	**Score**
20	6
19	3
18	2
17	1

2. **Solution**:
   The order of the placement of the square :
   A D C B H G F E

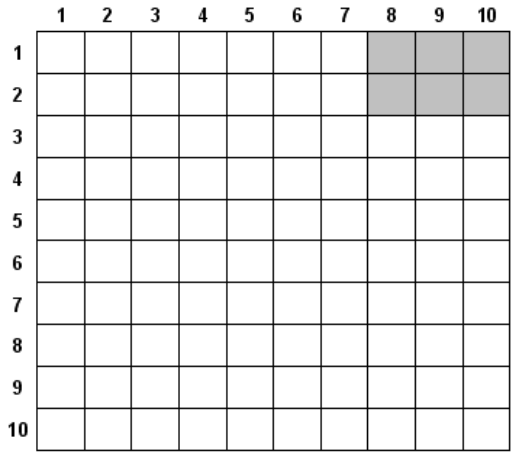
   Scoring: (TOTAL SCORE : 6)

length of longest correct sub-sequence	**Score**
8	6
7	4
6	3
5	2
4	1

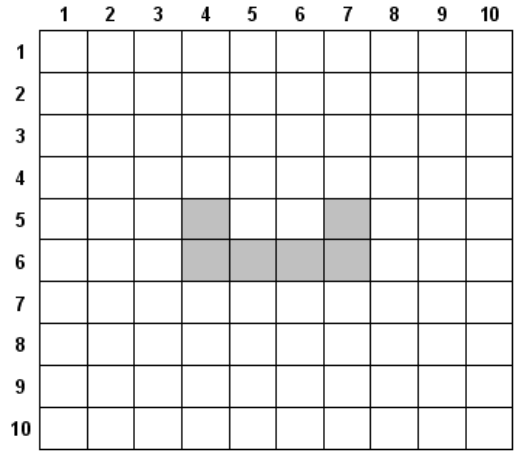
3. **Solution**:



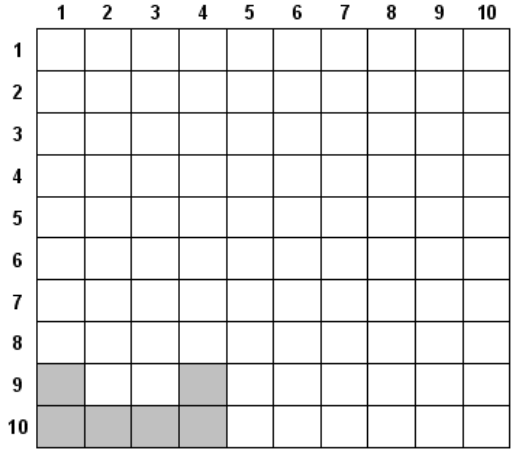
Solution A



Solution B



Solution C



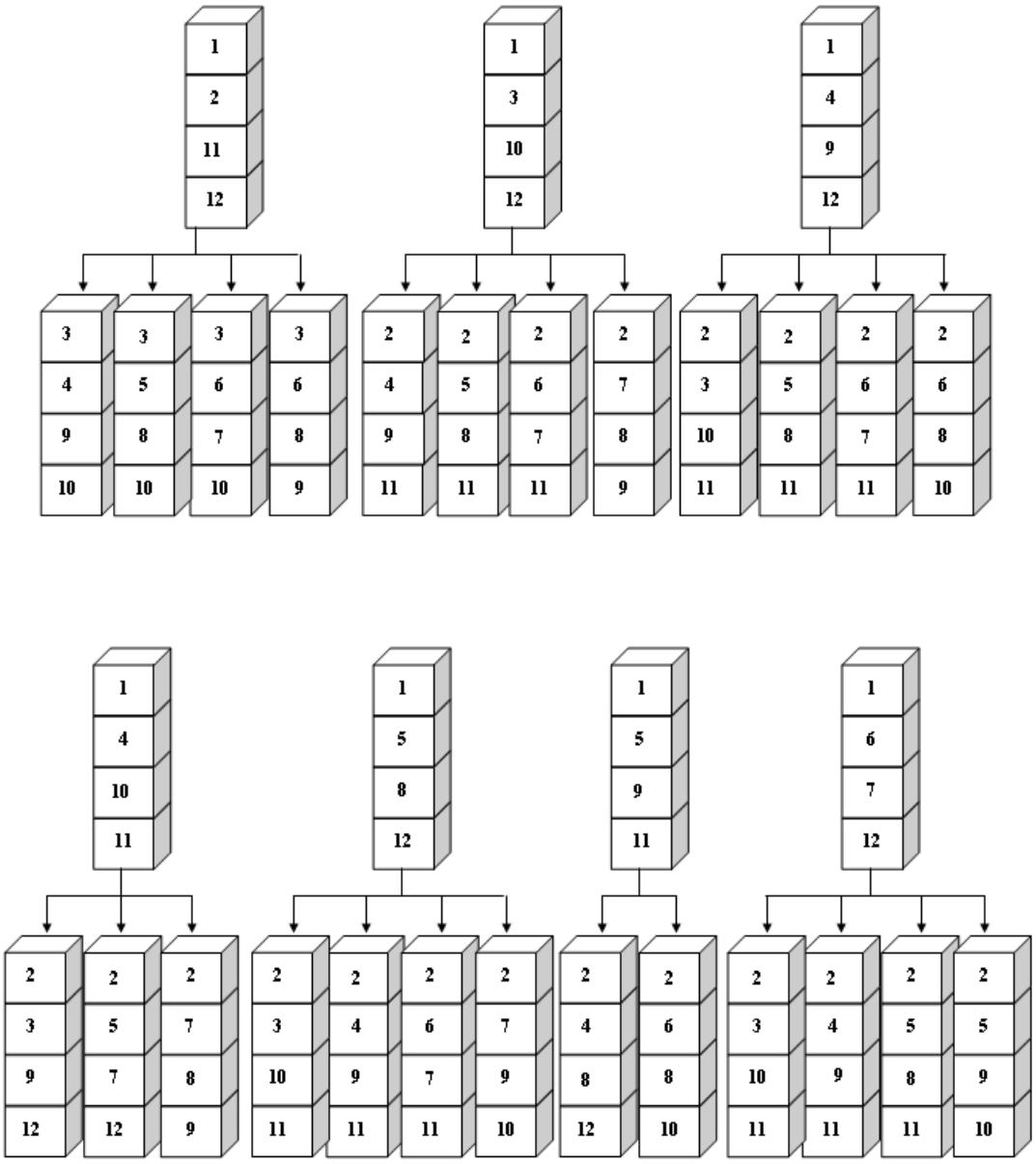
Solution D

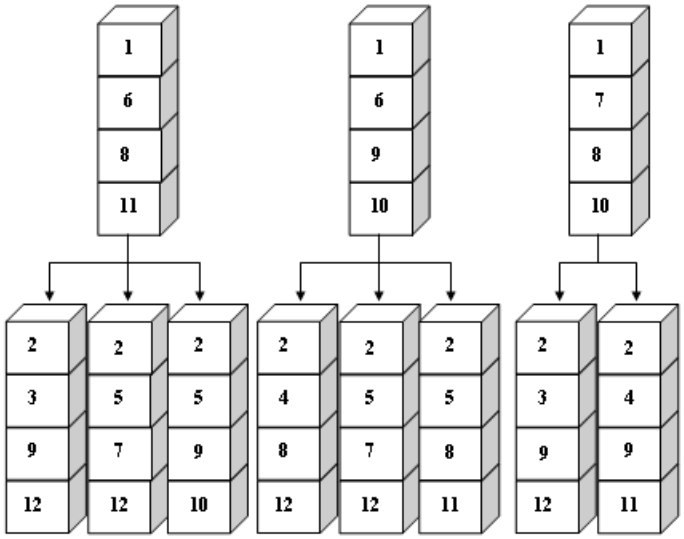
Note: Also for symmetric positions.

Scoring:

N O T E	**Score**
Answer A	1.5
Answer B	1.5
Answer C	1.5
Answer D	1.5

4. **Solution**:

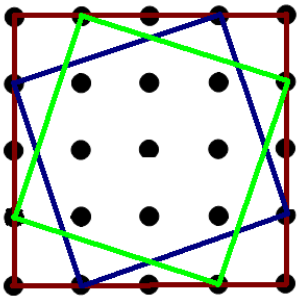

1 2 11 12
3 4 9 10
3 5 8 10
3 6 7 10
3 6 8 9
1 3 10 12
2 4 9 11
2 5 8 11
2 6 7 11
2 7 8 9
1 4 9 12
2 3 10 11
2 5 8 11
2 6 7 11
2 6 8 10
1 4 10 11
2 3 9 12
2 5 7 12
2 7 8 9
1 5 8 12
2 3 10 11
2 4 6 7
2 9 7 9
2 11 11 10
1 5 9 11
2 4 8 12
2 6 8 10
1 6 7 12
2 3 10 11
2 4 9 11
2 5 8 11
2 5 9 10



Scoring:

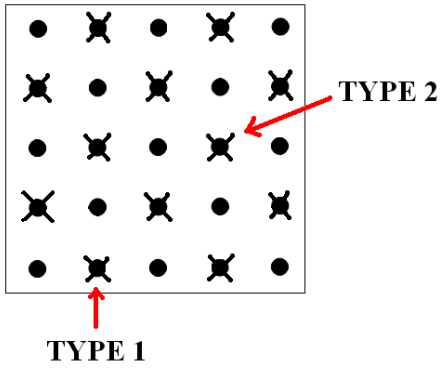
N O T E	**Score**
≥ 30 correct	6
$28-29$ correct	5.5
$26-27$ correct	5
$24-25$ correct	4.5
$22-23$ correct	4
$20-21$ correct	3.5
$18-19$ correct	3
$16-17$ correct	2.5
$14-15$ correct	2
$12-13$ correct	1.5
$10-11$ correct	1

5. **Solution 5A**:



Scoring: 1 point each square.

Solution 5B:



Scoring:

- $\frac{1}{2}$ point for marking at least one pin of type 1
  (+ 1 point for marking all six pins of type 1).
- 1 point for marking at least one pin of type 2
  (+ $\frac{1}{2}$ point for marking all four pins of type 1).
- - $\frac{1}{2}$ for every incorrect pin (minimum total score is 0).

6. **Solution**:

		COLUMN					
		C1	C2	C3	C4	C5	C6
ROW	R1	2	6	3	1	4	5
	R2	9	5	7	8	6	4
	R3	3	4	5	6	7	8
	R4	7	3	2	8	9	1
	R5	9	2	1	7	8	9
	R6	4	1	3	5	6	2

Scoring: $\frac{1}{2}$ point for each correct answer for a certain row/ column.