### Case study 6

## Hammad Zafar(19-ee-328)

# Question 1)solve the puzzles

#### **Solutions:**

Note:

Before placing any number make sure, that this number is not present in the entire row, coumn and submatrix

### Steps

- 1. Place 3 on the position 4,a
- 2. Place 1 on the position 4,d
- 3. Place 2 at 1,a
- 4. Place 4 at 1,d
- 5. Place 3 at 2,b
- 6. Place 4 at 3,b
- 7. Place 2 at 3,c
- 8. Place 1 at 2,c

Total steps reQuired=8

4	3	2	4	1
3	1	4	2	3
2	4	3	1	2
1	2	1	3	4
	а	b	С	d

### 9\*9 puzzle

9	5	4			2		8		6
8		1	9			7			3
7				3			2	1	
6	9			4		5		2	
5			1				6		4
4	6		4		3	2		8	
3		6					1	9	
2	4		2			9			5
1		9			7		4		2
	а	b	С	d	е	f	g	h	i

#### Note:

Before placing any number make sure, that this number is not present in the entire row, coumn and submatrix

### Steps

- 1. Place 3 at 9,c
- 2. Place 9 at 9,d
- 3. Place 1 at 9,f
- 4. Place 7 at 9,h
- 5. Place 2 at 8,a
- 6. place 6 at 8,d
- 7. place 8 at 8,e
- 8. place 5 at 8,g
- 9. place 4 at 8,h
- 10. place 8 at 7,a
- 11. place 7 at 7,b
- 12. place 6 at 7,c
- 13. place 5 at 7,e
- 14. place 5 at 7,f
- 15. place 9 at 7,i

- 16. place 8 at 6,b
- 17. place 7 at 6,c
- 18. place 6 at 6,e
- 19. place 3 at 6,g
- 20. place 1 at 6,i
- 21. place 3 at 5,a
- 22. place 2 at 5,b
- 23. place 7 at 5,d
- 24. place 9 at 5,e
- 25. place 8 at 5,f
- 26. place 5 at 5,h
- 27 | 5 | 4 |
- 27. place 5 at 4,b
- 28. place 1 at 4,d
- 29. place 9 at 4,g
- 30. place 7 at 4,i
- 31. place 7 at 3,a
- 32. place 5 at 3,c
- 33. place 2 at 3,d
- 34. place 4 at 3,e
- 35. place 3 at 3,f
- 55. place 5 at 5,1
- 36. place 8 at 3,i
- 37. place 3 at 2,b
- 38. place 8 at 2,d
- 39. place 1 at 2,e
- 40. place 7 at 2,g
- 41. place 6 at 2,h
- 42. place 1 at 1,a
- 43. place 8 at 1,c
- 44. place 5 at 1,d
- 45. place 6 at 1,f
- 46. place 3 at 1,h

Total steps required= 46

#### Solved puzzle:

9	5	4	3	9	2	1	8	7	<mark>6</mark>
8	2	1	9	6	8	7	5	4	3
7	8	7	6	3	5	4	2	1	9
6	9	8	7	4	6	<mark>5</mark>	3	2	1
5	3	2	1	7	9	8	<mark>6</mark>	5	4
4	6	5	4	1	3	<mark>2</mark>	9	8	7
3	7	<mark>6</mark>	5	2	4	3	1	9	8
2	4	3	2	8	1	9	7	6	<mark>5</mark>
1	1	9	8	5	7	6	4	3	2
	а	b	С	d	е	f	g	h	i