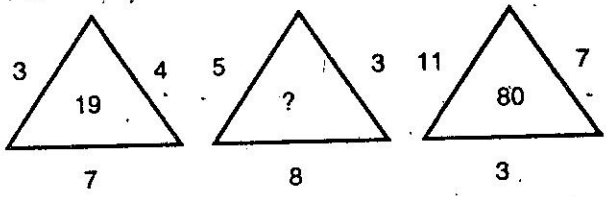


INSERTING THE MISSING CHARACTER

1. Replace question mark in the following figure.



1. 22 2. 23 3. 32 4. 28

2. Find out the missing number.

13	3	11
5	6	6
2	7	3
36	63	?

1. 51 2. 63 3. 46 4. 60

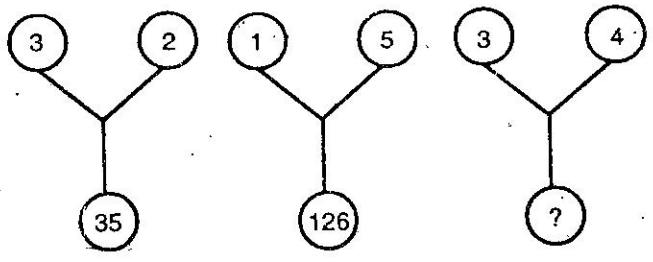
3. Find out the missing number

13	9	24
11	?	6
16	20	10

1. 11 2. 20 3. 19 4. 16

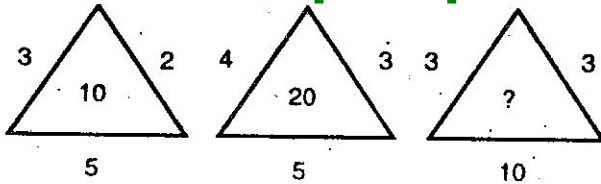
Directions (4 – 30) : In each of the following questions, Find the missing character

4.



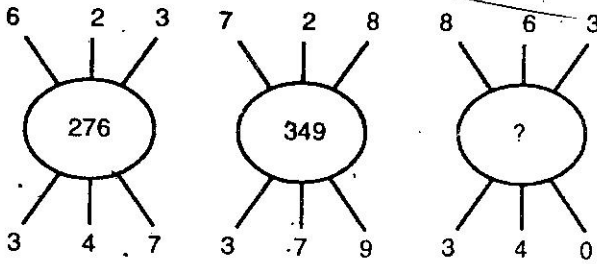
1. 90 2. 91 3. 103 4. 75

5.



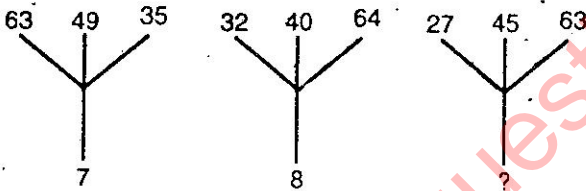
1. 30 2. 60 3. 15 4. 18

6.



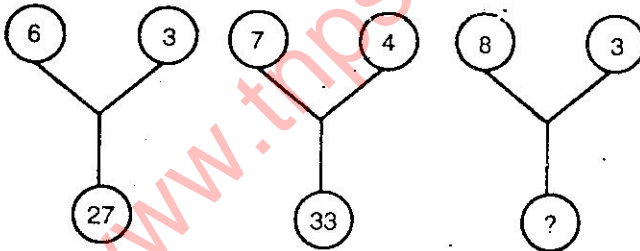
1. 625 2. 523 3. 532 4. 732

7.



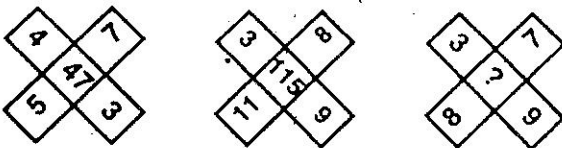
1. 9 2. 11 3. 13 4. 15

8.

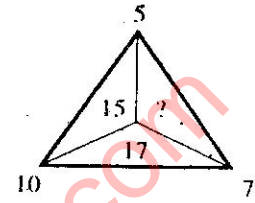
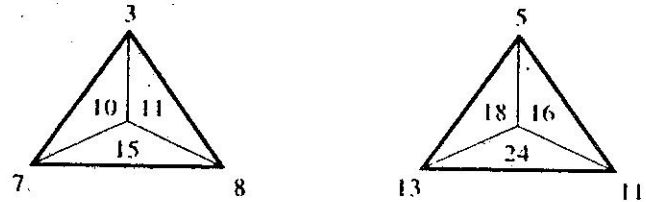


1. 53 2. 55 3. 65 4. 58

9.

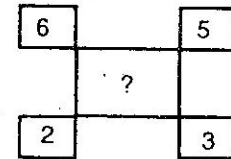
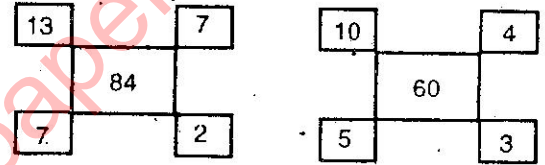


1. 53 2. 83 3. 76 4. 86



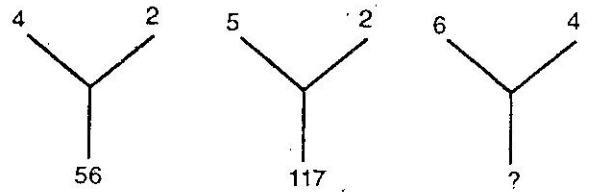
1. 14 2. 12 3. 24 4. 22

11.



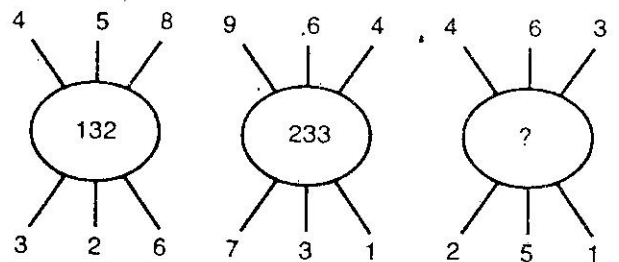
1. 40 2. 45 3. 35 4. 50

12.



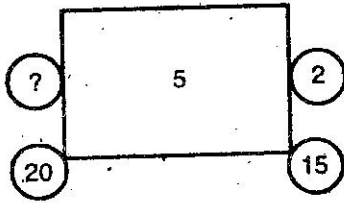
1. 150 2. 152 3. 162 4. 158

13.



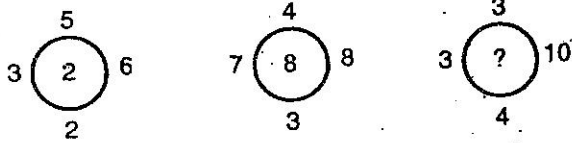
1. 212 2. 312 3. 248 4. 176

14.



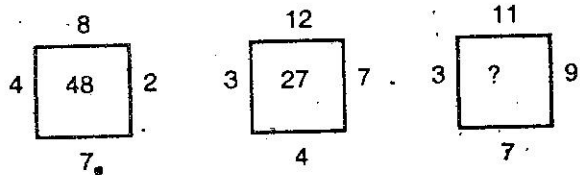
1. 4 2. 6 3. 3 4. 7

15.



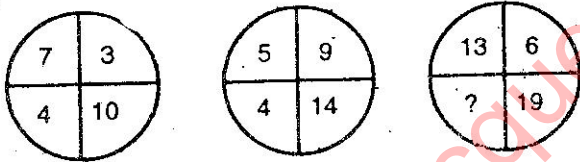
1. 5 2. 6 3. 8 4. 7

16.



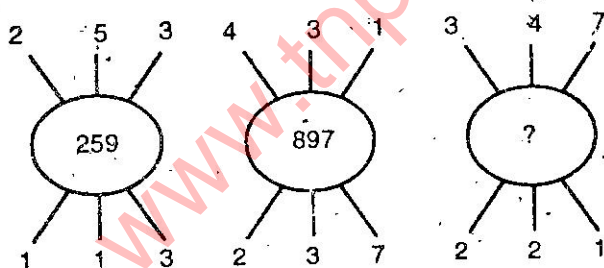
1. 40 2. 50 3. 48 4. 65

17.



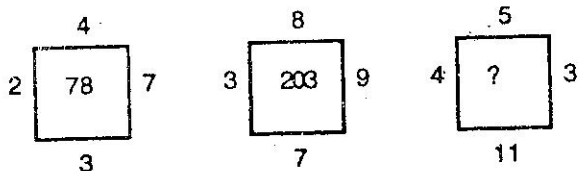
1. 6 2. 8 3. 3 4. 7

18.

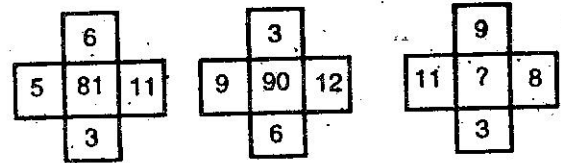


1. 687 2. 867 3. 680 4. 587

19.

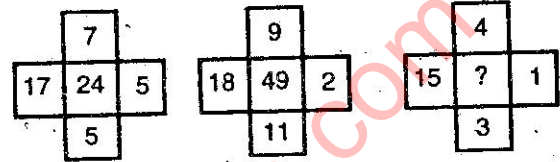


1. 161 2. 171 3. 181 4. 289



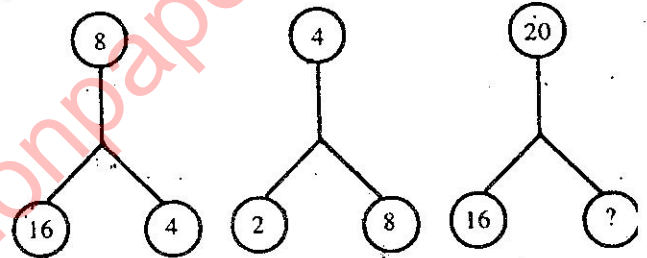
1. 115 2. 105 3. 205 4. 110

21.



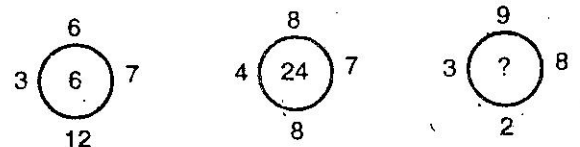
1. 30 2. 36 3. 40 4. 46

22.



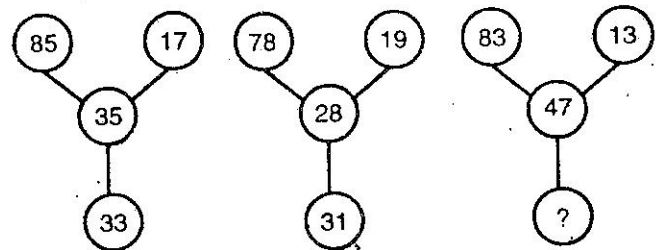
1. 20 2. 25 3. 35 4. 45

23.



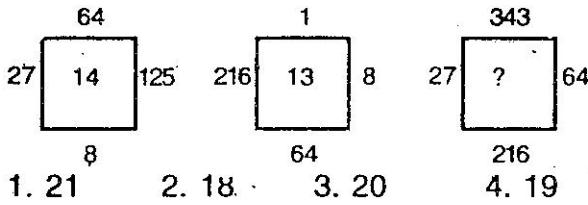
1. 66 2. 68 3. 69 4. 70

24.

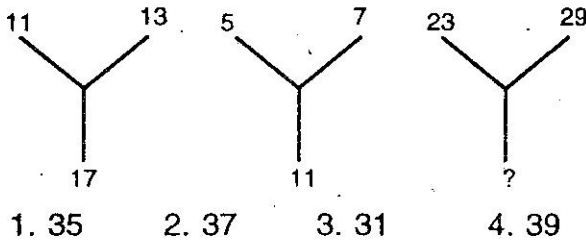


1. 20 2. 23 3. 13 4. 17

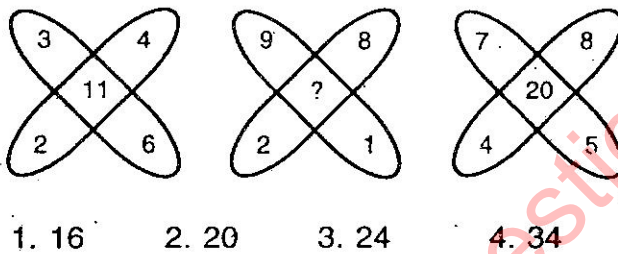
25.



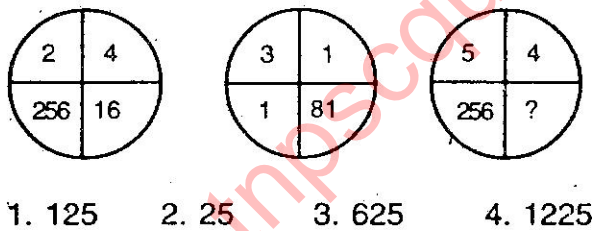
26.



27.



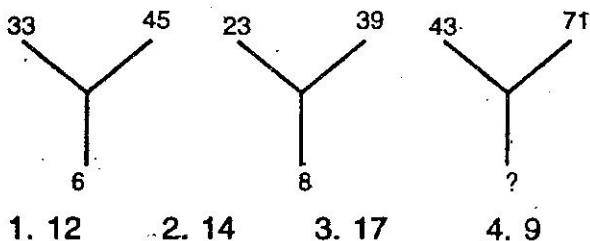
28.



29.



30.



In each of the following questions, a matrix of certain characters is given. These characters follow a certain trend, row-wise or column-wise. Find out this trend and choose the missing character accordingly.

31.

18	80	38
9	16	13
3	?	7
5	8	7

1. 8 2. 16 3. 19 4. 29

32.

24	27	45
13	17	12
3	3	?
104	153	60

1. 9 2. 5 3. 7 4. 8

33.

17	8	9
3	11	?
4	5	11

1. 3 2. 4 3. 6 4. 5

34.

8	20	28
6	15	21
10	?	35

1. 25 2. 28 3. 17 4. 35

35.

6	5	10
5	6	6
4	8	4
30	30	?

1. 60
2. 65
3. 35
4. 40

36.

5	4	3
13	12	5
?	21	20

1. 30
2. 41
3. 29
4. 34

37.

13	43	3
12	64	5
11	?	7

1. 81
2. 88
3. 91
4. 95

38.

5	17	15
2	2	3
12	36	?

1. 48
2. 45
3. 49
4. 50

39.

52	16	61
31	15	26
23	?	17

1. 13
2. 17
3. 18
4. 25

40.

96	4	6
72	24	8
?	36	9

1. 144
2. 160
3. 89
4. 108

41.

8	3	12
2	3	6
4	3	3
4	3	?

1. 5
2. 216
3. 6
4. 10

42.

3	8	2
4	11	13
3	?	28

1. 16
2. 15
3. 17
4. 20

43.

1	8	?
1	2	3
1	4	9

1. 26
2. 45
3. 27
4. 9

44.

8	7	16	14
9	6	18	12
11	3	?	?

1. 44,12
2. 22,6
3. 33,9
4. 10,20

45.

3	4	5
9	16	?
27	64	125

1. 25
2. 625
3. 45
4. 50

46.

F	J	N
B	F	J
L	?	T

1. P
2. Q
3. N
4. M

47.

Q	?	R
P	L	M
K	O	N

1. S
2. U
3. V
4. I

48.

BD ₃	CE ₅	DF ₁₅
EG ₈	FH ₃	GI ₂₄
HJ ₄	IK ₁₂	?

1. JL₂₄
2. JL₄₈
3. IL₄₈
4. IM₄₈

49.

A ₃	Y ₂	W ₈
M ₆	O ₄	Q ₄
J ₉	L ₆	?

1. N₃
2. N₁₂
3. M₂
4. N₆

50.

7B	5C	6B
3C	9B	19A
15A	17A	?

1. 10C
2. 12C
3. 14B
4. 16C

Directions 51 - 55 : In each of the following questions the numbers have been arranged according to the pattern shown in the sample figure given below. Find the missing number.

	819	
9	91	729
	81	

51.

	584	
8	?	512
	64	

1. 71
2. 73
3. 84
4. 90

52.

	399	
7	?	343
	49	

1. 56
2. 57
3. 67
4. 71

53.

	?	
14	211	2744
	196	

1. 1954
2. 3054
3. 2954
4. 2854

54.

	2379	
13	183	2197
	?	

1. 144
2. 169
3. 176
4. 186

	258	
6	?	216
	36	

1. 42
2. 41
3. 43
4. 46

Directions (56 - 60) : In the following questions, numbers have been arranged according to the same general pattern. Find the missing number in each question.

56.

		410	
	350		48
?		60	302

1. 7
2. 6
3. 10
4. 12

57.

		360	
	?		62
6		60	238

1. 300
2. 400
3. 350
4. 317

58.

		?	
	410		32
7		70	378

1. 480
2. 490
3. 190
4. 485

59.

		470	
	425		40
?		45	385

1. 35
2. 4
3. 4.5
4. 7

60.

		729	
	616		35
11.3		?	581

1. 143
2. 168
3. 113
4. 173

1. (2)

$$(3 \times 4) + 7 = 19$$

$$\text{and } (11 \times 7) + 3 = 80$$

$$\text{Similarly } (5 \times 3) + 8 = 23$$

2. (1)

From each column we have

$$(13 + 5) \times 2 = 36$$

$$(3 + 6) \times 7 = 63$$

$$(11 + 6) \times 3 = 51$$

3. (1)

Sum of numbers in each column is 40. So, 11 replaces the question mark.

4. (2)

$$3^3 + 2^3 = 35$$

$$1^3 + 5^3 = 126$$

$$3^3 + 4^3 = 91$$

5. (1)

$$(3 \times 2 \times 5) \div 3 = 10$$

$$(4 \times 3 \times 5) \div 3 = 20$$

$$(3 \times 3 \times 10) \div 3 = 30$$

6. (2)

$$(623 - 347) = 276$$

$$(728 - 379) = 349$$

$$(863 - 340) = 523$$

7. (1)

63, 49, 35 are all multiples of 7.

32, 40, 64 are all multiples of 8

Similarly of the given numbers
27, 45, 63 are all multiples of 9.

8. (2)

$$6^2 - 3^2 = 27$$

$$7^2 - 4^2 = 33$$

$$8^2 - 3^2 = 55$$

9. (2)

$$(4 \times 3) + (5 \times 7) = 47$$

$$(3 \times 9) + (11 \times 8) = 115$$

$$(3 \times 9) + (8 \times 7) = 83$$

$$(7 + 3) = 10, (3 + 8) = 11, (7 + 8) = 15$$

$$(13 + 5) = 18, (5 + 11) = 16, (13 + 11) = 24$$

$$(10 + 5) = 15, (5 + 7) = 12, (10 + 7) = 17$$

11. (2)

$$(13 - 7) \times (7 \times 2) = 84$$

$$(10 - 5) \times (4 \times 3) = 60$$

$$\text{Similarly } (6 - 2) \times (5 \times 3) = 45$$

12. (2)

$$4^3 - 2^3 = 56$$

$$5^3 - 2^3 = 117$$

$$\text{Similarly } 6^3 - 4^3 = 152$$

13. (1)

$$4 - 3 = 1$$

$$5 - 2 = 3$$

$$8 - 6 = 2$$

In second figure

$$(9 - 7) = 2, (6 - 3) = 3, (4 - 1) = 3$$

In the third figure

$$(4 - 2) = 2 \quad (6 - 5) = 1$$

$$(3 - 1) = 2$$

14. (3)

$$(2 \times 5) + 5 = 15$$

$$\text{Similarly } (3 \times 5) + 5 = 20$$

15. (2)

$$(3 + 6) - (5 + 2) = 2$$

$$(7 + 8) - (4 + 3) = 8$$

$$(3 + 10) - (3 + 4) = 6$$

16. (2)

$$(7 \times 8) - (4 \times 2) = 48$$

$$(12 \times 4) - (3 \times 7) = 27$$

$$(11 \times 7) - (3 \times 9) = 50$$

17. (4)

$$(7 + 3) = 10, (7 - 3) = 4$$

$$(5 + 9) = 14, (5 - 9) = -4$$

$$(13 + 6) = 19, (13 - 6) = 7$$

18. (1)

$$2 \times 1 \rightarrow 2 \quad 4 \times 2 \rightarrow 8$$

$$5 \times 1 \rightarrow 5 \quad 3 \times 3 \rightarrow 9$$

$$3 \times 3 \rightarrow 9 \quad 1 \times 7 \rightarrow 7$$

Similarly $3 \times 2 \rightarrow 6$

$$4 \times 2 \rightarrow 8$$

$$7 \times 1 \rightarrow 7$$

19. (2)

$$2^2 + 3^2 + 7^2 + 4^2 = 4 + 9 + 49 + 16 = 78$$

$$3^2 + 7^2 + 9^2 + 8^2 = 9 + 49 + 81 + 64 = 203$$

$$4^2 + 5^2 + 3^2 + 11^2 = 16 + 25 + 9 + 121 = 171$$

20. (2)

$$(5 \times 3) + (6 \times 11) = 81$$

$$(9 \times 6) + (3 \times 12) = 90$$

Similarly $(11 \times 3) + (9 \times 8) = 105$

21. (2)

$$(17 - 5) \times (7 - 2) = 24$$

$$(18 - 11) \times (9 - 2) = 49$$

Similarly $(15 - 3) \times (4 - 1) = 36$

22. (2)

$$16 \times 4 = 8^2$$

$$2 \times 8 = 4^2$$

Similarly $16 \times ? = 20^2 = 400$

$$? = 25$$

23. (1)

$$(6 \times 7) - (3 \times 12) = 6$$

$$(8 \times 7) - (4 \times 8) = 24$$

Similarly $(9 \times 8) - (3 \times 2) = 66$

24. (2)

$85 - (35 + 17) = 85 - 52 = 33$ which is in the lowest circle

In second fig $78 - (19 + 28) = 78 - 47 = 31$

Similarly $83 - (13 + 47) = 83 - 60 = 23$

25. (3)

$$\sqrt[3]{64} + \sqrt[3]{125} + \sqrt[3]{27} + \sqrt[3]{8} = 4 + 5 + 3 + 2 = 14$$

Similarly

$$\sqrt[3]{216} + \sqrt[3]{64} + \sqrt[3]{8} + \sqrt[3]{1} = 6 + 4 + 2 + 1 = 13$$

Similarly

$$\sqrt[3]{27} + \sqrt[3]{343} + \sqrt[3]{216} + \sqrt[3]{64} = 3 + 7 + 6 + 4 = 20$$

26. (3)

11, 13 and next prime number is 17 which is in the lowest position. 5, 7 and next prime number is 11.

Similarly 23, 29 and next prime no is 31.

27. (1)

$$(3 + 4 + 6 + 2) - 4 = 11$$
 Which is in middle

$$(7 + 8 + 5 + 4) - 4 = 20$$
 Which is in middle

Similarly $(9 + 8 + 1 + 2) - 4 = 16$

28. (3)

$2^4 \rightarrow 16$ which is in the opposite corner, $4^4 \rightarrow 256$ which is on the other diagonal.

Similarly for the second circle $1^4 \rightarrow 1$

$$3^4 \rightarrow 81$$

for the last circle $4^4 \rightarrow 256$ and

$$5^4 \rightarrow 5 \times 5 \times 5 \times 5 = 625$$

29. (1)

$$(2)^2 \rightarrow (4)^2 \rightarrow (16)^2 \rightarrow 256$$

30. (2)

$$(45 - 33) \div 2 = 6$$
 on the bottom

$$(39 - 23) \div 2 = 8$$

Similarly $(71 - 43) \div 2 = 14$

31. (2)

In the first Row,

$$(38 - 18) = 20 \times 4 = 80$$
 middle number

For second row, $(13 - 9) = 4 \times 4 = 16$

Third row, $(7 - 3) = 4 \times 4 = 16$

32. (1)

For the First column

$$24 \div 8 = 3$$

$$13 \times 8 = 104$$

For the Second column

$$27 \div 9 = 3$$

$$17 \times 9 = 153$$

For the Third column

$$45 \div 5 = 9$$

$$12 \times 5 = 60$$

33. (2)

Sum of numbers in each column is 24.

$$17 + 3 + 4 = 24$$

$$8 + 11 + 5 = 24$$

$$\text{Therefore } 24 - (9 + 11) = 4$$

34. (1)

$$8 \times \frac{5}{2} = 20 \quad 8 \times \frac{7}{2} = 28 \quad (\text{First row})$$

$$6 \times \frac{5}{2} = 15 \quad 6 \times \frac{7}{2} = 21 \quad (\text{Second row})$$

Similarly

$$10 \times \frac{5}{2} = 25 \quad 10 \times \frac{7}{2} = 35 \quad (\text{Third row})$$

35. (1)

$$5 \times 4 \times 6 \rightarrow \frac{120}{4} = 30$$

$$(6 \times 8 \times 5) \div 8 \rightarrow 30$$

$$\text{Similarly } (10 \times 6 \times 4) \div 4 \rightarrow 60$$

36. (3)

$$\sqrt{3^2 + 4^2} = \sqrt{5^2}$$

$$\sqrt{5^2 + 12^2} = \sqrt{13^2}$$

$$\sqrt{20^2 + 21^2} = \sqrt{29^2}$$

37. (1)

$$(13 \times 3) + 4 = 43 \quad \text{First row}$$

$$(12 \times 5) + 4 = 64 \quad \text{For Second row}$$

$$(11 \times 7) + 4 = 81 \quad \text{For Third row}$$

38. (1)

For first column

$$5 \times 2 = 10 = (12 - 2)$$

Second column

$$(17 \times 2) = 34 = (36 - 2)$$

$$(15 \times 3) = 45 = (x - 3) \Rightarrow 48 = x$$

39. (1)

$$(5 \times 2) + (6 \times 1) = 16$$

First row

$$(3 \times 1) + (2 \times 6) = 15$$

Second row

$$(2 \times 3) + (1 \times 7) = 13$$

Third row

40. (1)

For First row Third element is

$$6 \times 4 = 24 \times 4 = 96$$

for second row

$$(8 \times 3) = 24 \times 3 = 72$$

Similarly for Third row

$$(9 \times 4) = 36 \times 4 = 144$$

41. (3)

For First column

$$\sqrt[3]{8 \times 2 \times 4} = \sqrt[3]{64} = 4$$

For Second column

$$\sqrt[3]{3 \times 3 \times 3} = 3$$

Similarly Third column

$$\sqrt[3]{12 \times 6 \times 3} = \sqrt[3]{216} = 6$$

42. (2)

$$3 + 8 \rightarrow 11.$$

which in the position (2, 2)

$$3 + 8 + 2 \rightarrow 13 \text{ in } (2, 3)$$

$$\text{similarly } 4 + 11 \rightarrow 15 \text{ in } (3, 2)$$

43. (3)

$$\text{Middle row} = 1 \quad 2 \quad 3$$

$$\text{Second row} = 1^2 \quad 2^2 \quad 3^2$$

$$\text{First row} = 1^3 \quad 2^3 \quad 3^3$$

44. (2)

First row

$$8 \times 2 \rightarrow 16$$

$7 \times 2 \rightarrow$
 Second row
 $9 \times 2 \rightarrow 18$
 $5 \times 2 \rightarrow 12$
 Third row
 $11 \times 2 \rightarrow 22$
 $3 \times 2 \rightarrow 6$

45. (1)

First column
 $3^1, 3^2, 3^3$
 Second column
 $4^1, 4^2, 4^3$
 Third column
 $5^1, 5^2, 5^3$

46. (1)

$F \xrightarrow{+4} J \xrightarrow{+4} N$ First row
 $B \xrightarrow{+4} F \xrightarrow{+4} J$ Second row
 $L \xrightarrow{+4} \boxed{P} \xrightarrow{+4} T$ Third row

47. (1)

Starting from K, all the consecutive letters appear in the given matrix.

48. (2)

Starting from (1, 1) cell the letter B and consecutive letters appear. Similarly from (1,1) D and consecutive letters appear.

$3 \times 5 \rightarrow 15$ Third column, (1, 3)
 $8 \times 3 \rightarrow 24$ (2, 3) cell
 $4 \times 12 \rightarrow 48$ (3, 3) cell

49. (2)

See (1, 3) $W \xrightarrow{+2} Y \xrightarrow{+2} A$

See (2, 1) $M \xrightarrow{+2} O \xrightarrow{+2} Q$

See (3, 1), $J \xrightarrow{+2} L \xrightarrow{+2} N$

and in the first column the numbers are

$1 \times 3, 2 \times 3, 3 \times 3$

Second column $2 \times 1, 2 \times 2, 2 \times 3$

Third row $4 \times 1, 4 \times 2, 4 \times 3$

50. (4)

In each column, out of the letters A, B and C each of these must appear once. Along the

generally, the sum of two numbers is equal to the Third number. The missing number will be $(7 + 9)$ ie 16 and the letter will be C, so the answers is 16C.

The given figure can be ananged as follows.

$9 \times 9 \rightarrow 81 \rightarrow$ bottom box

$81 \times 9 \rightarrow 729 \rightarrow$ right box

$729 + 81 + 9 \rightarrow 819 \rightarrow$ Top box

$819 \div 9 \rightarrow 91 \rightarrow$ middle box

51. (2)

The above procedure can be applied to get the middle box ie 73

52. (2)

53. (3)

54. (2)

55. (3)

(56-60) Assume the pattern to be

	B	C	
D		E	F

Here $B = C + F$

$A = B + E$

and $D = \frac{E}{10}$

56. (2)

6 Since $D = \frac{60}{10}$

57. (1)

$B = C + F$ (ie) $62 + 238 = 300$

58. (1)

$A = B + E$

$= 410 + 70$

$= 480$

59. (3)

$\frac{45}{10} = 4.5$

60. (3)

113 Since $E = D \times 10$

$= 11.3 \times 10$

$= 113$