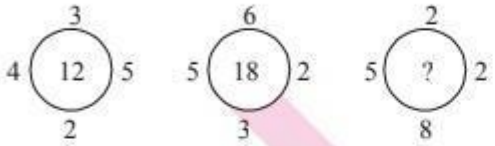
MAGIC CIRCLES & SQUARES

Magic Circle Problems

This unit is based on numerical calculations. Usually these are circles, the first two of which have four numbers at four points on the circle and one inside the circle. These numbers are placed according to some rules or sequence. The third cycle has any four numbers with fifth missing. We are required to find this number from the given choice, according to the same rule that holds good for other two circles.

❖ EXAMPLES ❖

Ex.1



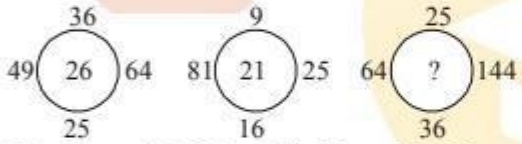
(A) 12 (B) 14 (C) 16 (D) 18

Sol. The answer to above question is (C) i.e. 16, because the numbers inside the first two circles are obtained by multiplying the outside numbers and dividing by 10, i.e.

$$\frac{5\times3\times4\times2}{10} = \frac{120}{10} = 12$$

The same follows for the second and third circles.

Ex.2



(A) 24 (B) 25 (C) 23 (D) 31

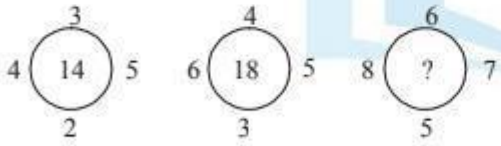
Sol. The answer is (D) i.e. 31, because the numbers inside the first two circles are obtained by taking the sum of the square roots of the four numbers outside the circles, e.g.

$$\sqrt{49} + \sqrt{64} + \sqrt{25} + \sqrt{36}$$
$$= 7 + 8 + 5 + 6 = 26 \text{ (I}^{st}\text{ Circle)}$$

and $\sqrt{16} + \sqrt{25} + \sqrt{9} + \sqrt{81}$

$$= 4 + 5 + 3 + 9 = 21 \text{ (II}^{nd}\text{ Circle)}$$

Ex.3



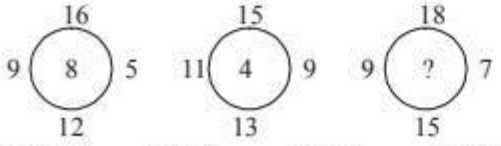
(A) 24 (B) 26 (C) 28 (D) 22

Sol. The answer is (B) i.e. 26, because

$(5^2 - 4^2) + (3^2 - 2^2) = 14$ (Ist circle) and

$(6^2 - 5^2) + (4^2 - 3^2) = 18$ (IInd circle)

Ex.4



(A) 12 (B) 8 (C) 4 (D) 5

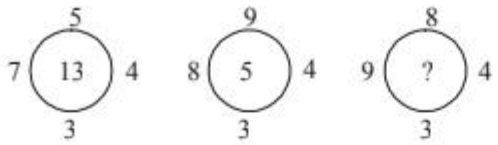
Sol. The answer is (D) i.e. 5, because

$(9 - 5) + (16 - 12) = 8$ (Ist Circle)

$(11 - 9) + (15 - 13) = 4$ (IInd Circle)

so, $(9 - 7) + (18 - 15) = 5$ (IIIrd Circle)

Ex.5



(A) 4 (B) 8 (C) 12 (D) 15

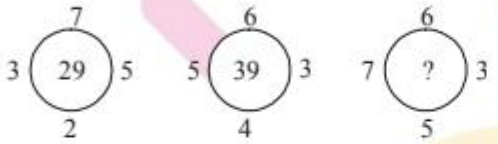
Sol. The answer is (C) i.e. 12 because

$(7 \times 4) - (5 \times 3) = 28 - 15 = 13$ (Ist Circle)

$(8 \times 4) - (9 \times 3) = 32 - 27 = 05$ (IInd Circle)

So, $(9 \times 4) - (8 \times 3) = 36 - 24 = 12$ (IIIrd Circle)

Ex.6



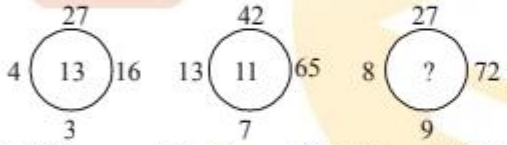
(A) 49 (B) 51 (C) 59 (D) 21

Sol. Answer is (B) i.e. 51, because

$(3 \times 5) + (7 \times 2) = 29$ and

$(5 \times 3) + (6 \times 4) = 39$

Ex.7



(A) 9 (B) 12 (C) 15 (D) 18

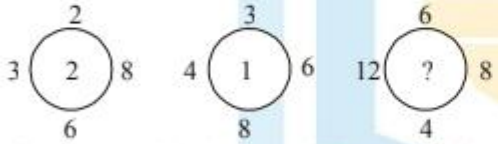
Sol. Answer is (B) i.e. 12, because

$(16 \div 4) + (27 \div 3) = 13$ (Ist Circle) and

$(65 \div 13) + (42 \div 7) = 5 + 6 = 11$ (IInd Circle)

So, $(72 \div 8) + (27 \div 9) = 9 + 3 = 12$ (IIIrd Circle)

Ex.8



(A) 3 (B) 4 (C) 5 (D) 6

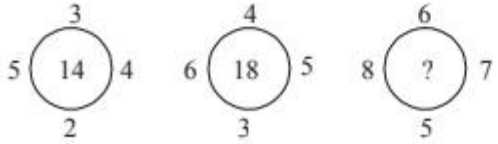
Sol. Ansser is (B) i.e. 4 because

$(3 \times 8) \div (2 \times 6) = 24 \div 12 = 2$ (Ist Circle)

$(4 \times 6) \div (8 \times 3) = 24 \div 24 = 1$ (IInd Circle)

So, $(12 \times 8) \div (6 \times 4) = 96 \div 24 = 4$ (IIIrd Circle)

Ex.9



(A) 49 (B) 26 (C) 59 (D) 21

Sol. Answer is (B) i.e. 26 because

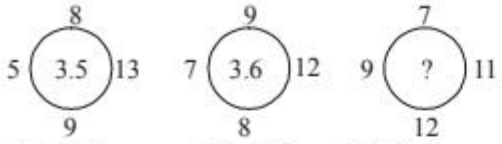
$(5 \times 4) - (3 \times 2) = 14$

$(5 \times 6) - (3 \times 4) = 18$

So, $(8 \times 7) - (5 \times 6) = 26$

This example has been solved already (see example 3), so it can be concluded that there are many method to solve the same problem.

Ex.10



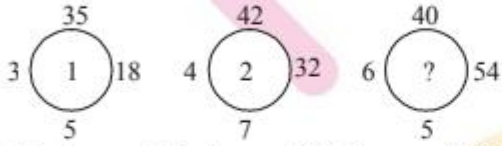
(A) 3.7 (B) 3.8 (C) 3.9 (D) 3.1

Sol. Answer is 3.9 because

$$\frac{(5+13+9+8)}{10} = 35 \div 10 = 3.5$$

$$\text{So, } \frac{(7+9+11+12)}{10} = 39 \div 10 = 3.9$$

Ex.11



(A) 0 (B) 1 (C) 3 (D) 5

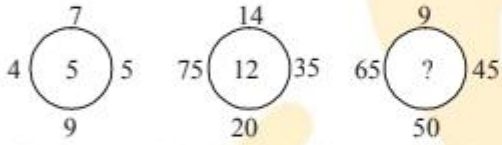
Sol. Answer is (B) i.e. 1 because pattern is

$(35 \div 5) - (18 \div 3) = 7 - 6 = 1$

$(32 \div 4) - (42 \div 7) = 8 - 6 = 2$

So, $(54 \div 6) - (40 \div 5) = 9 - 8 = 1$ Ans.

Ex.12



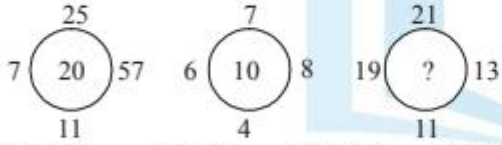
(A) 7 (B) 9 (C) 13 (D) 15

Sol. Answer is (C) i.e. 13 because

$\sqrt{4+7+5+9} = \sqrt{25} = 5$

$\sqrt{65+45+9+50} = \sqrt{169} = 13$ Ans.

Ex.13



(A) 16 (B) 25 (C) 36 (D) 49

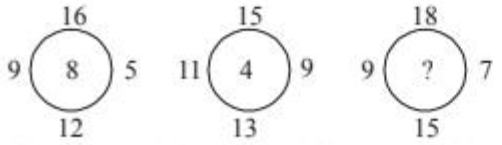
Sol. Answer is (A) i.e. 16 because

$2 \times \sqrt{25+57+11+7} = 2\sqrt{100} = 20$

$2 \times \sqrt{7+8+4+6} = 2\sqrt{25} = 10$

So, $2 \times \sqrt{21+13+19+11} = 2\sqrt{64} = 16$ Ans.

Ex.14



(A) 24 (B) 5 (C) 28 (D) 27

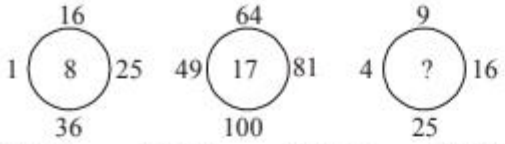
Sol. Answer is (B) i.e. 5 because

$(16 + 9) - (12 + 5) = 8$

$(11 + 15) - (9 + 13) = 4$

So, $(9 + 18) - (15 + 7) = 5$ Ans

Ex.15



(A) 6 (B) 7 (C) 8 (D) 9

Sol. Answer is (B) i.e. 7 because

$(\sqrt{1} + \sqrt{16} + \sqrt{25} + \sqrt{36}) \div 2$

$= 16 \div 2 = 8$

$(\sqrt{49} + \sqrt{64} + \sqrt{81} + \sqrt{100}) \div 2$

$= 34 \div 2 = 17$

So, $(\sqrt{4} + \sqrt{9} + \sqrt{16} + \sqrt{25}) \div 2$

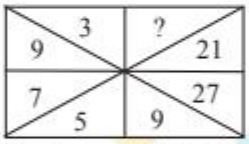
$= 14 \div 2 = 7$ Ans.

Magic Squares Problems

In these types of questions, numbers are arranged according to some rule in the cells made into a square. One cell is left empty, and we have to find the way the numbers are arranged and mark the answer from the choice given below. Let us consider some examples :–

❖ EXAMPLES ❖

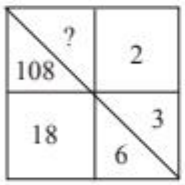
Ex.16



(A) 12 (B) 15 (C) 30 (D) 28

Sol. Answer is (B) i.e. 15 because the numbers in opposite cells are 3-times or 1/3 each other. e.g. $7 \times 3 = 21$, $3 \times 3 = 9$, $9 \times 3 = 27$, then $5 \times 3 = 15$

Ex.17



(A) 1 (B) 36 (C) 216 (D) 1944

Sol. The answer is 1944 as the numbers are arranged in the following way,

$2 \times 3 = 6$, $3 \times 6 = 18$, $6 \times 18 = 108$,

$18 \times 108 = 1944$

Ex.18

7	6	5
3	3	4
2	3	?

(A) 12 (B) 3 (C) 4 (D) 5

Sol. The answer is 3 because the sum of the numbers in each column is 12.

Ex.19

32	35	39
42	46	51
3	8	?

(A) 11 (B) 90 (C) 60 (D) 14

Sol. The answer is 14 because the numbers are increasing by 3 and 4 in the first row, 4 and 5 in the second row and 5 and 6 in the third row.

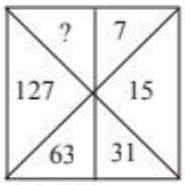
Ex.20

7	9	16
4	15	?
13	8	21

(A) 29 (B) 19 (C) 23 (D) 25

Sol. The answer is 19 because the sum of the first two numbers in each row gives the third number, i.e. $7 + 9 = 16$, $4 + 15 = 19$, $13 + 8 = 21$

Ex.21



(A) 255 (B) 440 (C) 190 (D) 250

Sol. The answer is 255 as the number is doubled and increased by 1 in each cell, starting from 7, i.e.

$7 \times 2 = 14 + 1 = 15$

$15 \times 2 = 30 + 1 = 31$

$31 \times 2 = 62 + 1 = 63$

$63 \times 2 = 126 + 1 = 127$

$127 \times 2 = 254 + 1 = 255$

Ex.22

17	11	19
12	13	16
25	4	?

(A) 36 (B) 9 (C) 25 (D) 64

Sol. In the first column $25 = (17 - 12)^2$ therefore $(19 - 16)^2$ is 9

Ex.23

21	56	70
45	87	84
115	180	?

(A) 130 (B) 195 (C) 295 (D) 150

Sol. The rule is that in each row the difference of first two numbers is doubled.

i.e. $(56 - 21) \times 2 = 70$. Hence the required number $(180 - 115) \times 2 = 130$

Ex.24

17	15	8
99	95	64
36	45	?

(A) 729 (B) 1331 (C) –729 (D) –343

Sol. The rule is that in a row as $(17 - 15)^3 = 8$.

Therefore $(36 - 45)^3 = (-9)^3 = -729$

Miscellaneous Pattern

Directions :

Find the missing character from among the given alternatives.

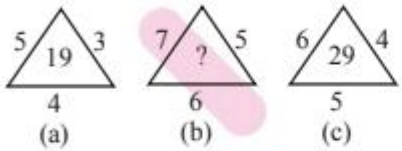
Ex.25

(A) 625 (B) 25 (C) 125 (D) 156

Sol. Clearly, $(3 + 2)^2 = 25$; $(15 + 6)^2 = (21)^2 = 441$; $(10 + 7)^2 = (17)^2 = 289$. So, missing number $= (12 + 13)^2 = (25)^2 = 625$.

Hence, the answer is (A).

Ex.26



(A) 25 (B) 37 (C) 41 (D) 47

Sol. Clearly, in fig. (a), $5 \times 3 + 4 = 19$.

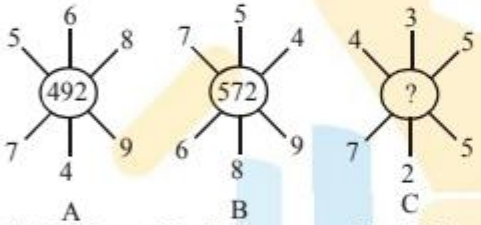
In fig (c) $= 6 \times 4 + 5 = 29$.

$\therefore$ In fig.(b), missing number

$= 7 \times 5 + 6 = 35 + 6 = 41$.

Hence, the answer is (C).

Ex.27



(A) 115 (B) 130 (C) 135 (D) 140

Sol. Clearly, the number inside the circle is equal to the sum of the product of the upper three numbers and the product of the lower three numbers. Thus,

In fig.

A, $(5 \times 6 \times 8) + (7 \times 4 \times 9) = 240 + 252 = 492$.

In fig.

B, $(7 \times 5 \times 4) + (6 \times 8 \times 9) = 140 + 432 = 572$.

$\therefore$ In fig C, missing number

$= (4 \times 3 \times 5) + (7 \times 2 \times 5) = 60 + 70 = 130$.

Hence, the answer is (B).

Ex.28

?	1	2
21	22	40
1	2	5
20	23	43

(A) 5 (B) 4 (C) 3 (D) 2

Sol. Clearly, in the second column, $22 + 2 - 23 = 1$.

In the third column, $40 + 5 - 43 = 2$.

$\therefore$ In the first column, missing number $= 21 + 1 - 20 = 2$.

Hence, the answer is (D).

Ex.29

6	18	15
3	2	5
4	3	?
8	27	9

(A) 11 (B) 6 (C) 3 (D) 2

Sol. Clearly, in the first column, $\frac{6\times4}{3} = \frac{24}{3} = 8$.

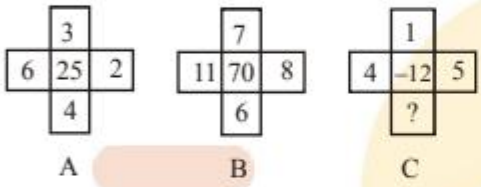
In the second column, $\frac{18\times3}{2} = \frac{54}{2} = 27$.

Let the missing number in the third column be x.

Then, $\frac{15\times x}{5} = 9$ or $15x = 45$ or $x = 3$.

Hence, the answer is (C).

Ex.30



A B C

(A) 10 (B) 6 (C) 2 (D) 1

Sol. The arrangement is as follows :

In fig.

A, $(3^2 + 6^2) - (2^2 + 4^2) = (9 + 36) - (4 + 16) = 45 - 20 = 25$.

In fig.

B, $(7^2 + 11^2) - (8^2 + 6^2) = (49 + 121) - (64 + 36)$

$= 170 - 100 = 70$.

In fig. (C), let the missing number be x.

Then, $(1^2 + 4^2) - (5^2 + x^2) = -12$

or $17 + 12 = (5^2 + x^2)$ or $x^2 = 29 - 25 = 4$

or $x = 2$.

Hence, the answer is (C).

Ex.31

3C	2B	4A
27A	?	64B
9C	4A	16B

(A) 8C (B) 12B (C) 16C (D) 18C

Sol. In each row, out of the letters A, B and C, each of these must appear once. Also, in each column, the product of first and third numbers is equal to the second number. So the missing number will be (2×4) i.e. 8 and the letter be C. Thus, the answer is 8C.

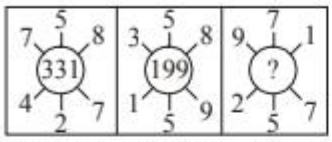
Hence, the correct answer is (A).

EXERCISE

Directions (Q. 1-15) :

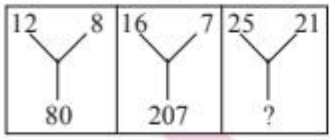
In these questions some figures are given. In these figures some numbers are given. These numbers follow a certain system. One such number is missing. Find out the number from the given choices.

Q.1



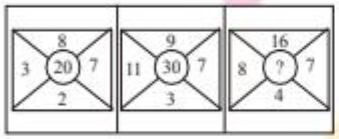
(A) 280 (B) 441 (C) 653 (D) 714

Q.2



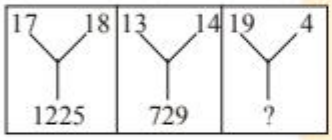
(A) 425 (B) 241 (C) 210 (D) 184

Q.3



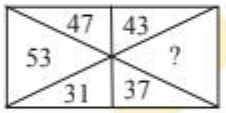
(A) 40 (B) 25 (C) 29 (D)35

Q.4



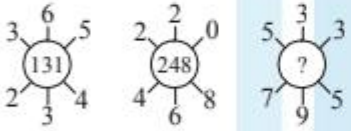
(A) 639 (B) 542 (C) 529 (D) 641

Q.5



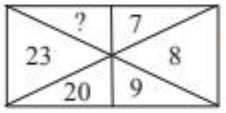
(A) 42 (B) 41 (C) 40 (D) 39

Q.6



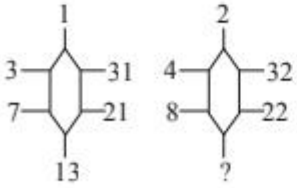
(A) 132 (B) 320 (C) 274 (D) 262

Q.7



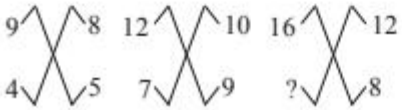
(A) 29 (B) 28 (C) 22 (D) 26

Q.8



(A) 16 (B) 12 (C) 41 (D) 14

Q.9

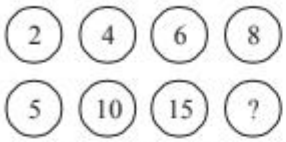


(A) 20 (B) 5 (C) 4 (D) 6

Q.10

(A) 18 (B) 15 (C) 16 (D) 12

Q.11



(A) 20 (B) 34 (C) 18 (D) 27

Q.12

8	7	5
10	7	5
9	7	?

(A) 2 (B) 5 (C) 1 (D) 25

Q.13

15	6	5
13	3	9
8	2	?
20	7	13

(A) 1 (B) 4 (C) 6 (D) 7

Q.14 Which one number can be placed at the sign of interrogation (?) in figure III so that it follows the operations of numbers in figure I and figure II ?

(A) 4 (B) 8 (C) 20 (D) 14

Q.15 Insert the missing number in the given trend :

2	10	4
3	17	5
3	?	4

(A) 16 (B) 15 (C) 12 (D) 14

Directions :

Choose the missing number in question 16-19. The relation between the number within the bracket and those outside the brackets are the same for both lines in each question.

Q.16 17 (112) 39
28 ( ) 49
30

(A) 42 (B) 77 (C) 108 (D) 154

Q.17 341 (250)466
282 ( )398

(A) 200 (B) 232 (C) 250 (D) 322

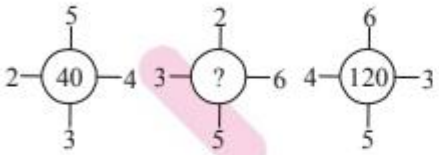
Q.18 17 (102) 12
15 ( ) 10
(A) 52 (B) 32 (C) 42 (D) 75

Q.19 12 (336) 14
15 ( ) 16
(A) 420 (B) 380 (C) 320 (D) 480

Direction :

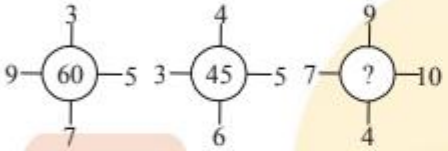
In question 20–29 numbers are placed in the figure on the basis of some rules. One place in the figure is indicated by (?). Find out the correct alternative to replace the question mark and encircle its letter.

Q.20



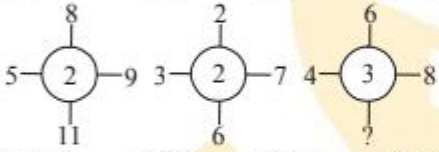
(A) 50 (B) 55 (C) 60 (D) 70

Q.21



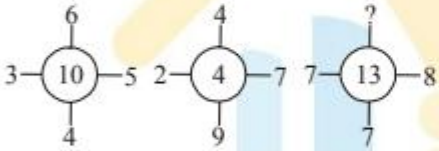
(A) 75 (B) 70 (C) 65 (D) 60

Q.22



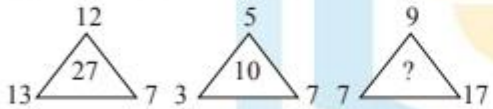
(A) 4 (B) 6 (C) 2 (D) 8

Q.23



(A) 9 (B) 8 (C) 7 (D) 5

Q.24

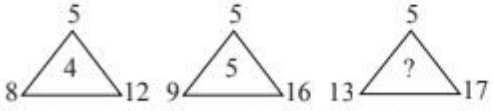


(A) 25 (B) 20 (C) 27 (D) 28

Q.25

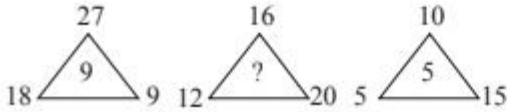
(A) 14 (B) 34 (C) 60 (D) 70

Q.26



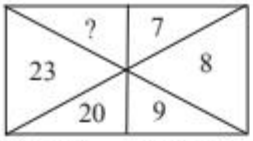
(A) 6 (B) 7 (C) 8 (D) 9

Q.27



(A) 12 (B) 10 (C) 8 (D) 6

Q.28



(A) 29 (B) 28 (C) 22 (D) 26

Q.29 1 : 310 : : 3 : ?

(A) 17 (B) 19 (C) 730 (D) 930

Direction :

Five sets of rules are given below. On the basis of these rules the entries of question 30 to 34 are filled. Find out the correct set of rule for every problem and encircle its letter.

Q.30

a	b	
–1	24	
11	12	1
c	d	e

Q.31

d	e	
28	12	
4	19	7
a	b	c

Q.32

d	e	
3	7	
48	21	8
a	b	c

Q.33

a	b	
–3	3	
9	27	27
c	d	e

Q.34

a	b	
2	9	
7	8	–1
c	d	e

(A) $a = e/3$, $b = c + e$, $d = a \times c$

(B) $c = a^2$, $d = b^3$, $e = c \times b$

(C) $a^2 = e$, $2d = b$, $a + d = c$

(D) $a = b - c$, $b = c + a$, $e = d - b$

(E) $a = (e^2) - 1$, $b = d \times e$, $c = a/6$

Direction :

In questions 35 to 39 the number inside the small square is related some way to the numbers outside it. Identify the relationship and indicate your answer on your answersheet by encircling the appropriate letter.

Q.35

(A) 13 (B) 15 (C) 17 (D) 14

Q.36

(A) 4 (B) 5 (C) 6 (D) 8

Q.37

(A) 7 (B) 10 (C) 13 (D) 12

Q.38

(A) 2 (B) 2.5 (C) 3 (D) 4.5

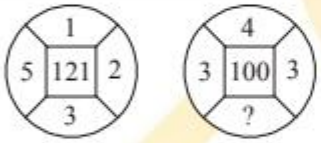
Q.39

(A) 4.2 (B) 4.6 (C) 6.2 (D) 2.4

Directions :

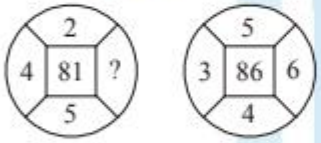
In questions 40 to 44 the number inside the small square is related some way to the numbers outside it. Identify the relationship and indicate your answe on your answer-sheet by encircling the appropriate letter.

Q.40



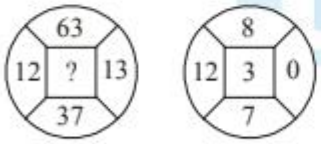
(A) 5 (B) 3 (C) 2 (D) 0

Q.41



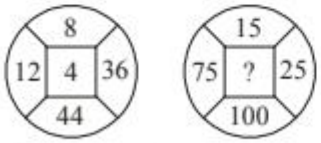
(A) 7 (B) 6 (C) 5 (D) 3

Q.42



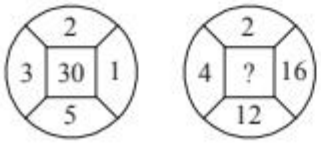
(A) 1 (B) 2 (C) 3 (D) 5

Q.43



(A) 4 (B) 5 (C) 6 (D) 3

Q.44



(A) 3478 (B) 1632 (C) 7684 (D) 1536

Directions :

In questions 45 to 49 the numbers given in each row follow some rule. Select the number which is missing (?) from the set as per rule amongst the five alternatives given bellow letter by encircling.

Q.45 8 8 (20)
4 14 (30)
12 ? (60)
(A) 48 (B) 36 (C) 27 (D) 24

Q.46 (50) 14 6
(70) 06 8
(?) 06 (12)
(A) 70 (B) 90 (C) 110 (D) 150

Q.47 03 (125) 02
05 (729) 04
07 (343) ?
(A) 00 (B) 01 (C) 02 (D) 03

Q.48 (382) 39 7
(125) 98 ?
(103) 39 4
(A) 2 (B) 3 (C) 4 (D) 5

Q.49 5 6 (–11)
7 8 (–15)
7 ? (33)
(A)00 (B) 01 (C) 02 (D) 04

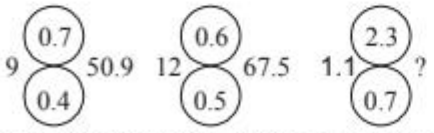
Directions :

In questions 50 to 54 numbers are arranged in patterns following some rules. One of the numbers is missing in each pattern. You have to select the missing number from the alternatives given.

Q.50

(A) 36 (B) 08 (C) 09 (D) 11

Q.51



(A) 22.59 (B) 21.5 (C) 24.55 (D) 27

Q.52

5	7	0.9
8	9	1.4
13	16	?

(A) 2.9 (B) 2.8 (C) 2.7 (D) 2.6

Q.53

2	72	18
9	9	162
?	32	128

(A) 4 (B) 50 (C) 02 (D) 15

Q.54

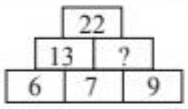
8	2	4	8
5	3	2	30
3	5	6	?

(A) 14 (B) 22 (C) 27 (D) 18

Directions :

Number in the following questions are arranged according to some definite pattern. One of the numbers is missing. You have to select the missing number from the alternatives given and encircle its number in your answer sheet against the proper question number.

Q.55



(A) 8 (B) 9 (C) 12 (D) 16

Q.56

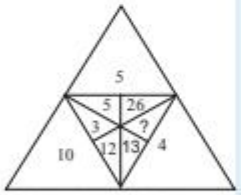
0.5	4	8
7	8.4	1.2
0.7	?	0.9

(A) 16 (B) 5.4 (C) 6.3 (D) 0.63

Q.57

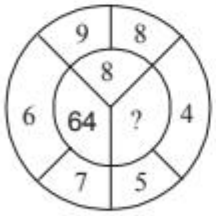
(A) 16 (B) 18 (C) 11 (D) 80

Q.58



(A) 14 (B) 12 (C) 24 (D) 16

Q.59

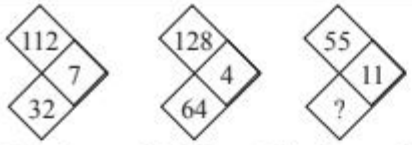


(A) 15 (B) 12 (C) 27 (D) 289

Directions :

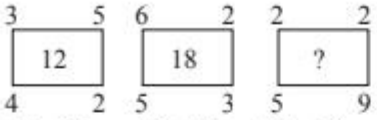
In question 60 to 69 numbers are placed in the figure on the basis of some rules. One place in the figure is indicated by (?). Find out the correct alternative to replace the question mark and encircle its number against the proper question number.

Q.60



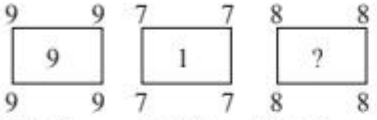
(A) 5 (B)10 (C) 8 (D) 12

Q.61



(A) 24 (B) 36 (C) 20 (D) 18

Q.62

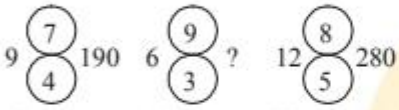


(A) 3 (B) 8 (C) 6 (D) 5

Q.63

(A) 12 (B) 16 (C) 3.2 (D) 22

Q.64

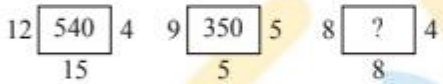


(A) 200 (B) 240 (C) 210 (D) 100

Q.65

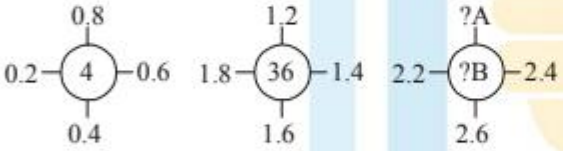
(A) 9.2 (B) 8 (C) 5.5 (D) 6

Q.66



(A) 92 (B) 128 (C) 320 (D) 9

Q.67

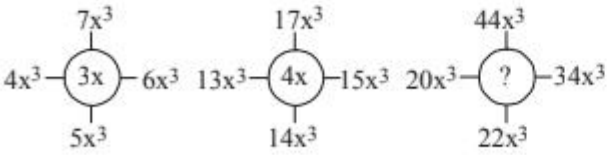


A **B**

(A) 2.8, 100 (B) 2.8, 360

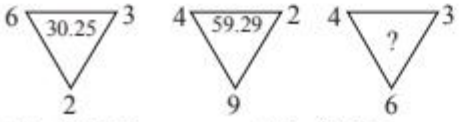
(C) 1.2, 100 (D) 0.8, 64

Q.68



(A) 2x (B) 7x (C) 9x (D) 5x

Q.69



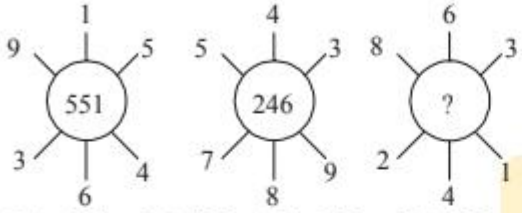
(A) 43.62 (B) 43.56

(C) 42.65 (D) 40.05

Q.70

(A) 20 (B) 22 (C) 25 (D) 30

Q.71



(A) 361 (B) 422 (C) 622 (D) 632

Q.72

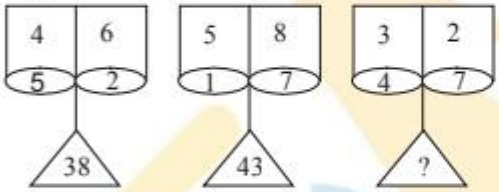
(A) 252 (B) 141 (C) 101 (D) 115

Q.73

15	125	10
8	55	3
14	?	7

(A)147 (B) 97 (C) 81 (D) 87

Q.74



(A) 39 (B) 49 (C) 29 (D) 19

Q.75

(A) 12 (B) 14 (C) 9 (D) –9

Q.76

6	20	37
8	26	49
20	?	121

(A) 18 (B) 12 (C) 62 (D) 15

Q.77

(A) 48 (B) 98 (C) 86 (D) 72

Q.78

(A) 15 (B) 13 (C) 12 (D) 10

Q.79

3	25	2
4	64	4
3	?	3

(A) 81 (B) 6 (C) 39 (D) 36

Q.80

45	9	54
34	9	43
24	?	42

(A) 18 (B) 30 (C) 3 (D) 10

Q.81

7	11	19
13	21	37
27	43	?

(A) 75 (B) 65 (C) 74 (D) 73

Q.82

5	28	3
11	125	4
9	?	11

(A) 85 (B) 92 (C) 99 (D) 70

Q.83

13	4	165
3	2	7
?	11	14

(A) 25 (B) 7 (C) 5 (D) 2

Q.84

41	43	4
47	53	36
?	61	4

(A) 57 (B) 59 (C) 63 (D) 67

Q.85

2	3	31
5	7	368
1	4	?

(A) 25 (B) 45 (C) 17 (D) 65

Q.86

4	9	25
49	?	361
121	169	289

(A) 519 (B) 81 (C) 100 (D) 529

Q.87

9	?	16
64	10	36
144	20	256

(A) 20 (B) 40 (C) 5 (D) 0

Q.88

6	18	24
23	73	113
11	37	?

(A) 65 (B) 78 (C) 75 (D) 4

Q.89

50	1	7
111	11	10
335	11	?

(A) 16 (B) 18 (C) 15 (D) 10

Q.90

5	11	36
11	4	125
15	15	?

(A) 240 (B) 250 (C) 290 (D) 300

Q.91

5	1	126
4	4	68
7	5	?

(A) 340 (B) 348 (C) 400 (D) 70

Q.92

256	128	32
112	56	14
800	400	?

(A) 200 (B) 100 (C) 25 (D) 50

Q.93

19	3	25
17	11	39
9	5	?

(A) 19 (B) 21 (C) 23 (D) 25

Q.94

12	15	54
37	14	102
71	23	?

(A) 168 (B) 178 (C) 188 (D) 190

Q.95

5	11	96
9	13	88
8	17	?

(A) 225 (B) 165 (C) 185 (D) 250

Q.96

5	7	74
11	8	185
13	?	205

(A) 5 (B) 6 (C) 7 (D) 8

Q.97

4	3	70
7	8	359
5	10	?

(A) 115 (B) 125 (C) 130 (D) 145

Q.98

11	7	324
15	6	441
9	5	?

(A) 140 (B) 106 (C) 186 (D) 196

Q.99

12	6	81
17	5	121
6	8	?

(A) 49 (B) 64 (C) 70 (D) 50

Q.100

225	64	23
16	1	5
49	81	?

(A) 71 (B) 16 (C) 60 (D) 30

Q.101

50	70	15
64	16	10
114	38	?

(A) 19 (B) 17 (C) 38 (D) 91

Q.102

1	3	28
2	5	133
7	?	407

(A) 4 (B) 6 (C) 8 (D) 9

Directions :

Each of the following questions has a matrix with a question mark in one block. Replace the question mark by choosing the correct response from amongst the alternatives given :

Q.103

A2	C4	E6
G3	I5	?
M5	O9	Q14

(A) L10 (B) K15 (C) K8 (D) J15

Q.104

K7	L4	M10
L8	M5	K12
M9	L6	?

(A) K24 (B) L14 (C) K14 (D) M14

Q.105

AC_4	BD_6	EG_{12}
HJ_{18}	KM_{29}	?
QS_{36}	TV_{38}	WY_{76}

(A) NP_{24} (B) OQ_{40} (C) NP_{40} (D) PQ_{68}

Q.106

D_{15} C_{18}	B_{21} A_{24}
F_9 ?	H_3 G_6

(A) E_{31} (B) E_{12} (C) F_{12} (D) H_8

Q.107 Find out the missing number

1	3	7
5	12	14
25	?	28
125	192	56

(A) 40 (B) 48 (C) 56 (D) 64

Q.108 Find out the missing number

?	13	49
9	17	69
13	11	59

(A) 9 (B) 5 (C) 10 (D) 21

Q.109 Find out the missing number

14	28	42
2	4	6
36	112	246
18	56	?

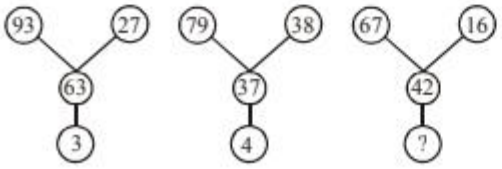
(A) 120 (B) 201 (C) 123 (D) 303

Q.110 Find out the missing number

1	2	3
11	7	5
120	45	?

(A) 15 (B) 16 (C) 17 (D) 18

Q.111 Which one number be placed at the sign of interogation ?



(A) 5 (B) 6 (C) 8 (D) 9

Q.112 Which number will com in place of "?"

(A) 35 (B) 37 (C) 45 (D) 47

Directions :

The numbers in following questions have been arranged according to an identical pattern. Find out the missing numbers :

Q.113

25	17	41
32	83	11
26	?	31

(A) 26 (B) 25 (C) 34 (D) 38

Q.114

7	10	11
?	28	3
13	1	14

(A) 9 (B) 8 (C) 15 (D) 6

Q.115

16	14	4
15	34	?
3	16	15

(A) 15 (B) 9 (C) 7 (D) 5

Q.116

6	8	?
9	3	13
10	14	1

(A) 11 (B) 9 (C) 7 (D) 5

Q.117

2	3	5
9	17	33
65	129	?

(A) 228 (B) 199 (C) 257 (D) 209

Q.118

25	4	57
9	71	6
52	?	23

(A) 21 (B) 11 (C) 31 (D) 15

Directions :

Arrangement of numbers in the following questions follow a common method. Find out the missing number :

Q.119

	49	
?	1	4
9	25	16

(A) 2 (B) 3 (C) 5 (D) 4

Q.120

	64	
2	4	6
4	?	36

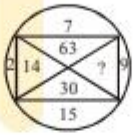
(A) 32 (B) 30 (C) 28 (D) 40

Q.121

	?	
1	4	5
1	26	25

(A) 25 (B) 36 (C) 20 (D) 81

Q.122 Find the missing number.

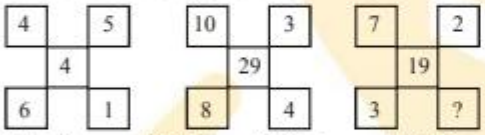


(A) 33 (B) 145 (C) 135 (D) 18

Q.123 Find the missing number.

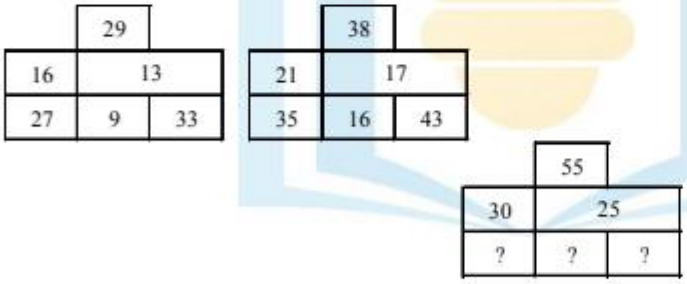
(A) 38 (B) 64 (C) 4 (D) 16

Q.124 Find the missing number in the following question :



(A) 4 (B) 5 (C) 1 (D) 3

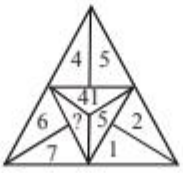
Q.125 Number in boxes given below follow the same arrangement. Your task is to find out the missing numbers :



(A) 65, 36, 63 (B) 53, 24, 63

(C) 49, 32, 53 (D) 51, 25, 61

Q.126 Find out the missing number.



(A) 16 (B) 9 (C) 85 (D) 112

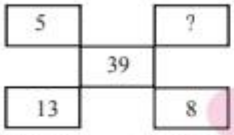
Q.127 Find out the missing number.

(A) 28 (B) 36 (C) 81 (D) 49

Directions :

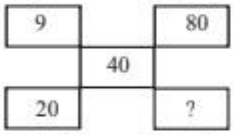
Numbers in the following questions have been arranged using a particular method. Find the number in place of "?"

Q.128



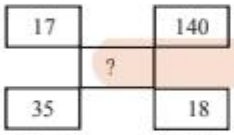
(A) 40 (B) 52 (C) 65 (D) 75

Q.129



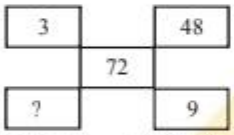
(A) 24 (B) 81 (C) 20 (D) 11

Q.130



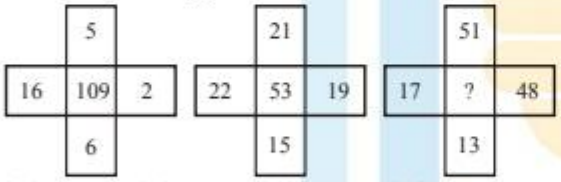
(A) 35 (B) 24 (C) 16 (D) 19

Q.131



(A) 12 (B) 16 (C) 32 (D) 24

Q.132 Find the missing number.



(A) 25 (B) 129 (C) 7 (D) 49

ANSWER KEY

Ques.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Ans.	D	D	D	C	B	D	D	D	C	A	A	C	A	D	D	D	B	D	D	C	A	B	D	D	D
Ques.	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Ans.	A	C	D	D	C	A	E	B	D	A	B	D	D	A	D	B	D	B	D	C	D	A	B	D	C
Ques.	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Ans.	C	D	C	B	B	D	B	C	C	B	D	D	B	C	B	C	A	A	B	C	C	B	A	C	A
Ques.	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Ans.	C	D	B	D	A	A	B	C	B	D	D	C	A	B	A	B	B	A	C	A	B	D	D	A	A
Ques.	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125
Ans.	A	A	C	C	C	B	B	B	C	B	D	B	A	B	A	A	C	B	B	D	B	C	C	B	D
Ques.	126	127	128	129	130	131	132																		
Ans.	C	A	B	D	A	A	A																		

HINTS & SOLUTION

103. In each block alphabet occurs skipping one alphabet, and numeric in the last row in each block is the sum of numerics in the first & second block. Hence, K8 will replace "?"

104. Each row consists of alphabets K, L and M, The difference in numeric of third column is 2. So, the missing number is K 14.

105. Each block comprises two alphabets and a numeric. Alphabets occur in pair with a gap of one alphabet and first alphabet of third column is the next alphabet of second alphabet of the second block. Numeric in third block of each row is 2 more than the sum of first & second block numeric. Hence NP_{40} is our answer.

106. Alphabate occurs in anticlockwise direction and the numeric is the multiple of 3 in clock wise derection. So, the answer is E_{12}.

107. The sequence of number in first column is × 5 i.e. $1 \times 5 = 5$, $5 \times 5 = 25$, $25 \times 5 = 125$. The sequence of number in second column is × 4, i.e., $3 \times 4 = 12$, $12 \times 4 = 48$, $48 \times 4 = 192$. Hence, the missing number is 48.

108. Number in the third block = 2 × Ist block number + 3 × IInd block number. So, the missing number is 5.

109. Number in the Ist row = 7 × number in the IInd row.

Number in the IIIrd row = 2 × number in the IVth row.

So, the missing number is 123.

110. Number in the third row

= (Number of IInd row)^2 – (Number of Ist row)^2

111. $93 - (27 + 63) = 3$

$79 - (38 + 37) = 4$

$67 - (16 + 42) = 9$

112. $39 = 3 \times 3 + 6 \times 5$

$51 = 4 \times 4 + 5 \times 7$

$37 = 4 \times 3 + 5 \times 5$

113. Number at the centre is the sum of numbers in the row and column.

114. Number at the centre is the sum of numbers in the row and column.

115. Number at the centre is the sum of numbers in the row and column.

116. Row wise and columnwise total is 25

117. Each succeeding number is one less than the double of preceding number.

118. Rowwise and columnwise total is 86.

119. $4 - 3 = 1$.

120. $(6)^2 + (2)^2 = 40$.

121. $(5 + 1)^2 = 36$.

122. $15 \times 2 = 30$, $2 \times 7 = 14$, $7 \times 9 = 63$, $9 \times 15 = 185$

So, the missing number is 135.

123. Clearly the numbers along the sides of triangle are the square of digtes of number at the centre.

$(1)^2 = 1$, $(4)^2 = 16$, $(3)^2 = 9$

$(2)^2 = 4$, $(3)^2 = 9$, $(6)^2 = 36$

So, the naswer is (C).

124. $\{(4)^2 + (5)^2\} - \{(6)^2 + (1)^2\} = 4$

$\{(10)^2 + (3)^2\} - \{(8)^2 + (4)^2\} = 29$

$\{(7)^2 + (2)^2\} - \{(3)^2 + (5)^2\} = 19$

So, the answer is 19.

125. First number $= (25 \times 2) + 1 = 51$

Second number $= (30 - 25)^2 = 25$

Third number $= (30 \times 2) + 1 = 61$.

126. $(1)^2 + (2)^2 = 5$

$(5)^2 + (4)^2 = 41$

$(6)^2 + (7)^2 = 85$.

127. $26 + 13 = 39$

$11 + 24 = 35$

$25 + 9 = 34$

$7 + 28 = 35$

Total of numbers are on the opposite side.

128. The pattern used for arrangement of numbers is as below :

$13 \times 4 = 52$ $\quad 8 + 5 = 13$ $\quad 13 \times (8 - 5) = 39$

$20 \times 4 = 80$ $\quad 11 + 9 = 20$ $\quad 20 \times (11 - 9) = 40$

$35 \times 4 = 140$ $\quad 18 + 17 = 35$ $\quad 35 \times (18 - 17) = 35$

$12 \times 4 = 48$ $\quad 9 + 3 = 12$ $\quad 13 \times (9 - 3) = 72$

129. Same pattern as above.

130. Same pattern as above.

131. Same pattern as above.

132. $(16 - 6)^2 + (5 - 2)^2 = (10)^2 + (3)^2 = 109$

$(22 - 15)^2 + (21 - 19)^2 = (7)^2 + (2)^2 = 53$

$(17 - 13)^2 + (51 - 48)^2 = (4)^2 + (3)^2 = 25.$