



Inserting the Missing Character

- Inserting the Missing Character is filling-up of the empty (missing) spaces in letter and number puzzles given in pictorial forms.
- In this type of questions, numbers or letters are represented through one or more figures (geometrical or any other figure). Such numbers or letters are arranged inside the figure according to a certain pattern (i.e. based on particular logic and/or mathematical calculations) but in such arrangement one character is missing which is denoted by question mark (?). The candidate is required to find out the character that can replace the question mark (?) satisfying the logic and calculations.

Directions (Example 1-4) Find the missing character from the given alternatives.

Example 1

35	40
?	45

- (a) 554 (b) 48 (c) 52 (d) 50

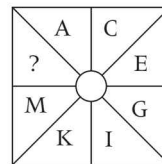
Sol. (d) Moving clockwise, the pattern is as follows

$$35 + 5 = 40 \text{ and } 40 + 5 = 45$$

So, missing number = $45 + 5 = 50$

Hence, option (d) is the correct answer.

Example 2



- (a) B (b) W (c) O (d) V

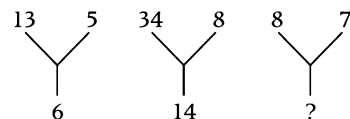
Sol. (c) Starting from A in clockwise direction, add 2 in each letter to obtain the next letter.

$$\begin{array}{ll} \text{As,} & A + 2 = C \qquad C + 2 = E \\ & E + 2 = G \qquad G + 2 = I \\ & I + 2 = K \qquad K + 2 = M \end{array}$$

Similarly, $M + 2 = O$

Hence, option (c) is the correct answer.

Example 3



- (a) 2 (b) 4 (c) 5 (d) 11

Sol. (c) As, $\frac{13+5}{3} = 6$ and $\frac{34+8}{3} = 14$

$$\text{Similarly, missing number} = \frac{8+7}{3} = \boxed{5}$$

Hence, option (c) is the correct answer.

Example 4

4	5	6
2	3	7
1	8	3
21	98	?

- (a) 85 (b) 94 (c) 104 (d) 49

Sol. (b) In First column, $(4)^2 + (2)^2 + (1)^2 = 21$, In second column $(5)^2 + (3)^2 + (8)^2 = 98$

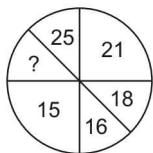
Similarly, in third column, $(6)^2 + (7)^2 + (3)^2 = 94$

Hence, option (b) is the correct answer.

Practice Exercise

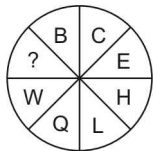
Directions (Q. Nos. 1-15) In each of the following questions a set of figures carrying certain characters is given. Assuming that the characters in each set follow a similar pattern, find the missing character in each case.

1.



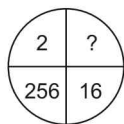
- (a) 28 (b) 30 (c) 35 (d) 27

2.



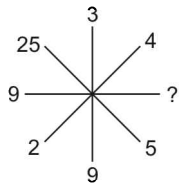
- (a) Z (b) X (c) I (d) D

3.



- (a) 8 (b) 4 (c) 32 (d) 16

4.



- (a) 81 (b) 64 (c) 32 (d) 20

5.

W				
T				
Q				
N	K	?	E	B

- (a) H (b) L
(c) G (d) F

6.

A	D	G
D	I	N
I	P	?

- (a) V (b) W
(c) X (d) Y

7. 63 7 9

30 5 6

20 4 ?

- (a) 8 (b) 3
(c) 5 (d) 2

8.

9	5	6
5	7	?
3	4	5
135	140	150

- (a) 4 (b) 5
(c) 8 (d) 10

- 13.**
- | | | |
|---|----|----|
| | 7 | |
| 5 | 89 | 15 |
| | 2 | |

	18	
5	87	3
	4	

	6	
9	?	7
	12	
- (a) 135 (b) 85
(c) 195 (d) 95
- 14.**
- | | |
|----|----|
| 30 | |
| 8 | 34 |

12	
5	13

?	
7	30
- (a) 11 (b) 19
(c) 18 (d) 22
- 15.**
- | | | |
|---|----|---|
| | 13 | |
| 4 | 8 | 3 |
| | 4 | |

	34	
8	10	4
	2	

	13	
4	?	3
	1	
- (a) 2 (b) 4
(c) 1 (d) 5

[illegible]

Hence, option (a) is the correct answer.

6. (b) Considering row wise,

$$\begin{array}{ccccc} 1 & & 4 & & 7 \\ A & \xrightarrow{+3} & D & \xrightarrow{+3} & G \\ 4 & & 9 & & 14 \\ D & \xrightarrow{+5} & 1 & \xrightarrow{+5} & N \\ 9 & & 16 & & 23 \\ 1 & \xrightarrow{+7} & P & \xrightarrow{+7} & W \end{array}$$

7. (c) As, $7 \times 9 = 63$ and $5 \times 6 = 30$

Similarly, $4 \times ? = 20 \Rightarrow ? = \frac{20}{4} = \boxed{5}$

8. (b) The pattern is as follows

$$9 \times 5 \times 3 = 135$$

$$5 \times 7 \times 4 = 140$$

Similarly, $6 \times \boxed{5} \times 5 = 150$

Hence, 5 will come in place of question mark.

9. (c) As, $(4^2 + 3) = 19$ and $6^2 + 2 = 38$

Similarly, $7^2 + 5 = \boxed{54}$

10. (a) As, $(4^2 + 6^2) = 52$ and $(9^2 + 2^2) = 85$

Similarly, $(14^2 + 5^2) = 221$

11. (c) Here, the pattern is as follows

$$7 \times 3 = 21, \quad 21 \times 2 = 42$$

$$9 \times 3 = 27, \quad 27 \times 2 = 54$$

Similarly, $14 \times 3 = ? = 42$ and $42 \times 2 = 84$

So, the missing number = 42

12. (c) There are four opposite letter pairs in the question and their sum is equal to 27. Pairs are as follows.

AZ, DW, H? and KP

\therefore Letter opposite to H is S.

Hence, S will come in place of question mark.

13. (a) As, $(7 \times 2) + (5 \times 15) = 89$

and $(18 \times 4) + (5 \times 3) = 87$

Similarly, $(6 \times 12) + (9 \times 7) = 135$

14. (b) As, $30 + 34 = 64$

Now, $\sqrt{64} = 8$

and $12 + 13 = 25$

Now, $\sqrt{25} = 5$

Similarly, $? + 30 = 7^2$

$$? + 30 = 49$$

$$? = 49 - 30 = 19$$

15. (d) As, $(4 \times 3) + (13 \times 4) = 64$

Now, $\sqrt{64} = 8$

and $(8 \times 4) + (34 \times 2) = 100$

Now, $\sqrt{100} = 10$

Similarly, $(13 \times 1) + (4 \times 3) = 25$

Now, $\sqrt{25} = 5$