SERIES COMPLETION

WHAT IS IT?

- In this type of questions, some numbers and/or alphabetical letters are given.
- They all form a series and the series changes in certain order.
- The series may also have one or more numbers/letters missing.
- You are required to observe that specific order in which the series changes and then complete the series.

TYPES OF SERIES

- Number Series
- Alpha series
- Letter series
- Number and letter Analogy

NUMBER SERIES

TYPES OF NUMBER SERIES

I. Prime number Series :

Example (1) : 2,3,5,7,11,13, ...

Answer : The given series is prime number series . The next prime number is 17.

Example (2) :2,5,11,17,23,.....41.

Answer: The prime numbers are written alternately.

II. Difference Series :

Example (1): 2,5,8,11,14,17,.....,23.

Answer: The difference between the numbers is 3. (17+3 = 20)

Example (2): 45,38,31,24,17,.....,3.

Answer: The difference between the numbers is 7. (17-7=10).

III. Multiplication Series:

Example (1) : 2,6,18,54,162,.....,1458.

Answer: The numbers are multiplied by 3 to get next number. (162x3 = 486).

Example: (2) : 3,12,48,192,.....,3072.

Answer : The numbers are multiplied by 4 to get the next number. (192x4 =768).

IV. Division Series:

Example (1): 720, 120, 24, ...,2,1

Answer: 720/6=120, 120/5=24, 24/4=6, 6/3=2, 2/2=1.

Example (2) : 32, 48, 72, 108, ..., 243.

Answer: 2. Number x 3/2= next number. 32x3/2=48, 48x3/2=72, 72x3/2=108, 108x3/2=162.

V. n^2 Series:

Example(1) : 1, 4, 9, 16, 25, ..., 49

Answer: The series is 1^2, 2^2, 3^2, 4^2, 5^2, ... The next number is $6^2=36$;

Example (2) : 0, 4, 16, 36, 64, ... 144.

Answer :The series is 0^2, 2^2, 4^2, 6^2, etc. The next number is $10^2=100$.

VI. n^2-1 Series :

Example : 0, 3, 8, 15, 24,35, 48, ...,

Answer : The series is 1^2-1, 2^2-1, 3^2-1 etc. The next number is 8^2 -1=63.

Another logic : Difference between numbers is 3, 5, 7, 9, 11, 13 etc. The next number is (48+15=63).

VII.n^2 +1 Series :

Example : 2, 5, 10, 17, 26, 37, ..., 65.

Answer : The series is 1^2+1, 2^2+1, 3^2+1 etc. The next number is $7^2+1=50$.

VIII. n^2+n Series (or) n^2-n Series :

Example : 2, 6, 12, 20, ..., 42.

Answer : The series is 1^2+1, 2^2+2, 3^2+3, 4^2+4 etc. The next number = $5^2+5=30$.

Another Logic : The series is 1x2, 2x3, 3x4, 4x5. The next number is 5x6=30.

Another Logic : The series is 2^2-2, 3^2-3, 4^2-4, 5^2-5. The next number is $6^2-6=30$.

IX. n^3 Series :

Example : 1, 8, 27, 64, 125, 216, ...

Answer : The series is 1^3, 2^3, 3^3, etc. The missing number is $7^3=343$.

X. n^3+1 Series :

Example : 2, 9, 28, 65, 126, 217, 344, ...

Answer : The series is 1^3+1, 2^3+1, 3^3+1, etc. The missing number is $8^3+1=513$.

XI. n^3-1 Series :

Example : 0, 7, 26, 63, 124, ..., 342.

Answer: The series is 1^3-1, 2^3-1, 3^3-1 etc. The missing number is 6^3-1=215.

XII. n^3+n Series :

Example : 2, 10, 30, 68, 130, ..., 350.

Answer : The series is 1^3+1, 2^3+2, 3^3+3 etc .The missing number is $6^3+6=222$.

XIII. n^3-n Series :

Example :0, 6, 24, 60, 120, 210, ...,

Answer : The series is 1^3-1, 2^3-2, 3^3-3, etc. The missing number is 7^3-7=336.

Another Logic : The series is 0x1x2, 1x2x3, 2x3x4, etc. The missing number is 6x7x8=336.

XIV. n^3+n^2 Series :

Example : 2, 12, 36, 80, 150, ...,

Answer: The series is $1^3+1^2, 2^3+2^2, 3^3+3^2$etc. The missing number is $6^3+6^2=252$

XV. n^3-n^2 Series:

Example: 0,4,18,48,100,.....,

Answer : The series is $1^3-1^2, 2^3-2^2, 3^3-3^2$ etc. The missing number is $6^3-6^2=180$

XVI. xy, x+y Series:

Example: 48,12,76,13,54,9,32,.....,

Answer : 4+8=12, 7+6=13, 5+4=9 , 3+2=5.

XVII.Factorial Series:

Example: 1,1,2,6,24,120,……..,

Answer : 0!=1, 1!=1, 2!=2, 3!=6, 4!=24, 5!=120, 6!=720

ALPHA SERIES

- In following alphabet series , one term missing as shown by question mark (?). Choose missing term from options.

U, O, I, ?, A

(a) E

(b) C

(c) S

(d) G

Ans: a

The series consists of vowels A, E, I, O, U written in a reverse order.

- In following alphabet series , one term missing as shown by question mark . Choose missing term from options.

  Y, W, U, S, Q, ?, ?

a) N,J
b) M,L
c) J,R
d) L,M
e) O,M

Ans: e

The series consists of alternate letters in reverse order.

- Find the missing term.

  WFB, TGD, QHG, ?

a) NIJ
b) NIK
c) NJK
d) OIK
e) PJK

Ans: b

W -3 T -3 Q -3 N

❖ Find the missing term.

ELFA, GLHA, ILJA, _____, MLNA

a) OLPA

b) KLMA

c) LLMA

d) KLLA

Ans: d

The second and forth letters in the series, L and A, are static. The first and third letters consist of an alphabetical order beginning with the letter E.

LETTER SERIES

Q1. Complete the series.
ba_ba_bac_acb_cbac

A) aacb
B) bbca
C) ccba
D) cbac
E) None of these

Ans: c

Q2. n_mnp_ _ p_ npmn_ mnp

a) pmnpm

b) pmnpp

c) pmnmp

d) pnpmn

e) Pppmn

Ans: c

The block of letters npm has been repeated.

NUMBER AND LETTER ANALOGY

- 3 : 12 :: 5 : ?

a) 25
b) 35
c) 30
d) 15

Ans: c

3 $(3^2)+3$ 12
5 $(5^2)+5$ 30

❖ 14 : 9 :: 26 : ?

a) 12
b) 13
c) 31
d) 15

Ans: D

14 = (2 x 9 - 4)

26 = (2 x 15 - 4)

? = 15

❖ MO : 13 11 :: RT : ?

a) 19 17
b) 8 6
c) 8 10
d) 16 18

Ans: b

Number the letters in reverse order. Then -1 the respective number.

PRACTICE QUESTIONS

Ex.1 Which number would replace question mark in the series

7, 12, 19, ?, 39.

a)29
b)28
c)26
d)24

SOLUTION

Clearly, the given sequence follows the pattern :

+ 5, +7, +9 ... i.e.,

7 + 5 = 12,

12 + 7=19

Missing number = 19 + 9 = 28.

Hence, the answer is (b).

Ex.2 Which is the number that comes next in the sequence :

0 6 24 60 120 210 ?

a) 240 b) 290 c) 336 d) 504

SOLUTION

Clearly, the given series is

$l^3 - 1, 2^3 - 2, 3^s - 3, \ldots\ldots, 4^3 - 4, 5^3 - 5$

Next number = $7^3 - 7 = 343 - 7 = 336$.

Hence, the answer is (c).

Ex.3 Which is the number that comes next in the following sequence ?

4, 6, 12, 14, 28, 30, (?)

a) 32
b) 60
c) 62
d) 64

SOLUTION

The given sequence is a combination of two series :

I. 4. 12, 28, ( ) and

II. 6. 14, 30.

Now, the pattern followed in each of the above two series is :

+ 8, + 16. + 32

So. missing number = (28 + 32) = 60.

Hence, the answer is (b).

Ex4. Look at this series:

14, 28, 20, 40, 32, 64, ...

What number should come next?

A. 52

B. 56

C. 96

D. 128

SOLUTION

- **Answer:** Option **B**
- **Explanation:**
- This is an alternating multiplication and subtracting series: First, multiply by 2 and then subtract 8.

Ex5. Newspaper : Press : : Cloth : ?

a) Tailor
(b) Textile
(c) Fibre
(d) Factory
(e) Mill

SOLUTION

- **Answer:** Option **E**
- **Explanation:**
- Newspaper is printed in Press and Cloth is manufactured in Mill.

Ex6. Cup is to coffee as bowl is to

A. Dish

B. Soup

C. Spoon

D. food

SOLUTION

- **Answer:** Option **B**
- **Explanation:**
- Coffee goes into a cup and soup goes into a bowl. Choices a and c are incorrect because they are other utensils. The answer is not choice d because the word food is too general.

Ex7. Which word does NOT belong with the others?

A. tire
B. steering wheel
C. engine
D. car

SOLUTION

- **Answer:** Option **D**
- **Explanation:**
- Tire, steering wheel, and engine are all parts of a car.

Ex8. Which word does NOT belong with the others?

A. inch
B. ounce
C. centimeter
D. yard

SOLUTION

- **Answer:** Option **B**
- **Explanation:**
- An ounce measures weight; the other choices measure length.