How to solve number series problems easily By Tricks

Generally, two kinds of series are asked in the examination.  One is based on numbers and the other based on alphabets**.**  
**Step 1:** Observer are there any familier numbers in the given series.  Familier numbers are primes numbers, perfect squares, cubes ... which are easy to identify.    
**Step 2:** Calculate the differences between the numbers.  Observe the pattern in the differences.  If the differences are growing rapidly it might be a square series, cube series, or multiplicative series.  If the numbers are growing slowly it is an addition or substration series.

If the differences are not having any pattern then  
1.  It might be a double or triple series.  Here every alternate number or every 3rd number form a series  
2.  It might be a sum or average series.  Here sum of two consecutive numbers gives 3rd number.  or average of first two numbers give next number  
              
**Step 3:** Sometimes number will be multiplied and will be added another number So we need to check those patterns  
  
TYPES :

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. n2 Series:

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

**Answer**:  The series is 12, 22, 32, 42, 52, .... The next number is 62=36;

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

**Answer** :The series is 02, 22, 42, 62, etc. The next number is 102=100.

VI.  n2−1 Series :

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

**Answer** : The series is 12-1, 22-1, 32-1 etc. The next number is 82-1=63.

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

VII.n2+1 Series : 

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

**Answer** : The series is 12+1, 22+1, 32+1 etc. The next number is 72+1=50.

VIII. n2+n Series (or)  n2−n Series :

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

**Answer** : The series is 12+1, 22+2, 32+3, 42+4 etc. The next number = 52+5=30.

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

Another Logic : The series is 22-2, 32-3, 42-4, 52-5, The next number is 62-6=30.  
  
IX. n3 Series :

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

**Answer** : The series is 13, 23, 33, etc. The missing number is 73=343.  
  
X. n3+n Series :   
**Example** : 2, 9, 28, 65, 126, 217, 344, ...........

**Answer** : The series is 13+1, 23+1, 33+1, etc. The missing number is 83+1=513.

XI. n3−1 Series :

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

**Answer**: The series is 13-1, 23-1, 33-1 etc The missing number is 63-1=215.

XII. n3+n Series :

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

**Answer** : The series is 13+1, 23+2, 33+3 etc The missing number is 63+6=222.

XIII. n3−n Series :

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

**Answer** : The series is 13-1, 23-2, 33-3, etc. The missing number is 73-7=336.

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

XIV. n3+n2 Series :

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

**Answer**: The series is 13+12,23+22,33+32etc. The missing number is 63+62=252

XV. n3−n2 Series:

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

**Answer** :  The series is 13-12,23-22,33-32 etc. The missing number is 63-62=180

XVI. xy, x+y Series:  
**Example**: 48,12,76,13,54,9,32,...............,  
 **Answer**:2.  4+8=12, 7+6=13, 5+4=9   .: 3+2=5.

Concept And Tricks Of Number Series

**What is Number Series?**  
Number series is a arrangement of numbers in a certain order, where some numbers are wrongly put into the series of numbers and some number is missing in that series, we need to observe and find the accurate number to the series of numbers.  
  
In competitive exams number series are given and where you need to find missing numbers. The number series are come in different types. At first you have to decided what type of series are given in papers then according with this you have to use shortcut tricks as fast as you can .  
 **Different types of Number Series**  
There are some format of series which are given in Exams.  
 **Perfect Square Series:**  
This Types of Series are based on square of a number which is in same order and one square number is missing in that given series.  
 **Example 1:**441, 484, 529, 576?  
  
Answer: 441 = 212, 484 = 222, 529 = 232, 576 = 242 , 625 = 252.  
  
**Perfect Cube Series:**   
  
This Types of Series are based on cube of a number which is in same order and one cube number is missing in that given series  
  
Example 2: 1331, 1728, 2197, ?  
  
Answer : 113 ,  123 ,  133 ,  143   
  
**Geometric Series:**  
  
This type of series are based on ascending or descending order of numbers and each successive number is obtain by multiplying or dividing the previous number with a fixed number.  
  
**Example 3:** 5, 45, 405, 3645,?  
  
Answer: 5 x 9 = 45, 45 x 9 = 405, 405 x 9 = 3645, 3645 x 9 = 32805.  
  
**Two stage Type Series:**  
  
A two tier Arithmetic series is one in which the differences of successive numbers themselves form an arithmetic series.  
  
**Example 4:** i. 3, 9, 18, 35, 58,——  
  
ii. 6, 9, 17, 23,———-  
  
  
**Mixed Series:**  
  
This type of series are more than one different order are given in a series which arranged in alternatively in a single series or created according to any non-conventional rule. This mixed series Examples are describes in separately.  
  
**Examples 5:**  
  
11, 24, 50, 102, 206, ?  
  
**Answer:**  
  
11 x 2 = 22 +2 = 24,  
  
24 x 2 = 48 + 2 = 50,  
  
50 x 2 = 100 + 2 = 102,  
  
102 x 2 = 204 + 2 = 206,  
  
206 x 2 = 412 + 2 = 414.  
So the missing number is 414.