

Number Series

Let us begin by observing the following series:

2, 4, 6, 8, 10,

clearly, it is an even number series.

Now, let us observe the following series:

62, 127, 214, 345, 510,

This series is obtained by alternatively subtracting and adding 2 to the cubes of natural numbers beginning with 4.

i.e., 62, 127, 214, 345, 510,

$$\downarrow \quad \downarrow \quad \downarrow \quad \downarrow \quad \downarrow \\ (4^3 - 2) \quad (5^3 + 2) \quad (6^3 - 2) \quad (7^3 + 2) \quad (8^3 - 2)$$

The pattern of the first series can be more easily understood as compared to the second one because we are more familiar with the first pattern, i.e; even numbers.

So, let us familiarise ourselves with more such patterns.

Type 1: Even/odd number series

Example 1: 2, 4, 6, 8, 10,

The above series is an even number series. The next term in this series is 12.

Example 2: 1, 3, 5, 7, 9,

This is an odd number series. The next term will be 11.

Type 2: Prime number series

Example 1: 2, 3, 5, 7,

The next term will be 11.

Example 2: 3, 7, 13, 19,

This series is formed by picking up alternate terms from the prime number series beginning with 3.

3, 5, 7, 11, 13, 17, 19, 23, 29

So, the next term will be 29.

Example 3: 3, 7, 17,

This series is formed by picking up terms from the prime number series beginning with 3 and leaving out one term, two terms, three terms and so on successively in between.

3, 5, 7, 11, 13, 17, 19, 23, 29, 31

So, the next term will be 31.

Type 3: Series formed by squares of numbers

Example 1: 4, 9, 16, 25, 36,

This series is formed by squares of successive numbers beginning with 2
 $2^2, 3^2, 4^2, 5^2, 6^2, 7^2$

So, the next term will be 49.

Example 2: 1, 9, 25, 49, 81,

These are squares of odd numbers.

$1^2, 3^2, 5^2, 7^2, 9^2, 11^2$

So, the next term will be 121.

Type 4: Series formed by Cubes of numbers

Example 1: 64, 125, 216, 343,

These are cubes of successive numbers beginning with 4.

So, the next term will be 512.

Example 2: 8, 27, 125, 343,

These are cubes of prime numbers.

So, the next term will be $11^3 = 1331$.

Type 5: Series formed by addition

Example 1: 12, 13, 15, 17,

This series is formed by adding 10 to each term of the prime number series beginning with 2.
 $(2 + 10), (3 + 10), (5 + 10), (7 + 10)$
So, the next term will be $(11 + 10) = 21$.

Example 2: 1, 3, 4, 8, 15, 27,

Previous three terms are added to find the terms beginning from 8.
 $1 + 3 + 4 = 8, 3 + 4 + 8 = 15, 4 + 8 + 15 = 27, 8 + 15 + 27 = 50$
So, the next term will be 50.

Type 6: Series formed by multiplication

Example 1: 0.5, 1.5, 4.5, 13.5,

Here, each term is formed by multiplying the previous term by 3. So, the next will be 40.5.
Example 2: 1, 3, 7, 15, 31, 63,

Each term is formed by multiplying the previous term by 2 and adding 1
So, the next term will be $\rightarrow 63 \times 2 + 1 = 127$.

Type 7: Series formed by division

Example 1: 840, 168, 42, 14, 7,

$(840 \div 5) = 168, (168 \div 4) = 42, (42 \div 3) = 14, (14 \div 2) = 7, (7 \div 1) = 7$.
So, the next term will be 7.

Example 2: 240, ...?..., 120, 40, 10, 2.

$240 \div 1 = 240, 240 \div 2 = 120, 120 \div 3 = 40, 40 \div 4 = 10, 10 \div 5 = 2$.
So, the missing term is 240.

Type 8: Series formed by subtracting or adding something to squares of successive terms.

Example 1: 12, 20, 30, 42,

This series is formed by squaring a term and adding the same term to the square.
 $3^2 + 3 = 12, 4^2 + 4 = 20, 5^2 + 5 = 30, 6^2 + 6 = 42, 7^2 + 7 = 56$.
So, the next term will be 56.

Example 2: 3, 7, 13, 21,

$1^2 + 2, 2^2 + 3, 3^2 + 4, 4^2 + 5, 5^2 + 6$.

So, the next term will be 31.

Type 9: Series formed by subtracting or adding something to cubes of successive terms.

Example 1: 0, 6, 24, 60, 120,

$1^3 - 1 = 0, 2^3 - 2 = 6, 3^3 - 3 = 24, 5^3 - 5 = 120, 6^3 - 6 = 210$

So, the next term will be 210.

Example 2: 10, 24, 68, 120,

$2^3 + 2 = 10, 3^3 - 3 = 24, 4^3 + 4 = 68, 5^3 - 5 = 120, 6^3 + 6 = 222$.

So, the next term will be 222.

Type 10: Combination of two different series.

Example 1: $\frac{1}{2}, \frac{3}{4}, \frac{5}{8}, \frac{7}{16}, \dots$

The numerators term a series of odd numbers. The series of denominators is formed by multiplying the previous number by 2.

Numerators: 1, 3, 5, 7, 9 ; Denominators : 2, 4, 8, 16, 32

So, the next term will be $\frac{9}{32}$.

Example 2: 512, 16, 343, 25,

It is a combination of two series.

$8^3, 4^2, 7^3, 5^2, \dots$

So, the next term will be $6^3 = 216$.

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Type 11: Series formed by adding terms at more than one level
 Example: 5, 12, 27, 58, 121,

Sol.	5	12	27	58	121	248
	+7	+15	+31	+63	+127	
	+8	+16	+32	+64		

So, the next term will be 248.

Some Important Series

- (i) 8, 4, 4, 6, 12,

$$8 \times \frac{1}{2} = 4, 4 \times 1 = 4, 4 \times \frac{3}{2} = 6, 6 \times 2 = 12, 12 \times \frac{5}{2} = 30$$

So, the next term will be 30.

- (ii) 6, 9, 18, 45,

$$6 \times \frac{3}{2} = 9, 9 \times 2 = 18, 18 \times \frac{5}{2} = 45, 45 \times 3 = 135.$$

Some point to remember

- (i) If a series increases abruptly then it may be a case of series formed by multiplication.

Example: 2, 3, 6, 18, 108, 1944.

Here, each term is formed by multiplying previous two terms.

- (ii) if a series decreases abruptly, then it may be a case of series formed by division.

Example: 6120, 1020, 204, 51, 17.

$6120 \div 6 = 1020, 1020 \div 5 = 204, 204 \div 4 = 51$ and so on.

- (iii) if a series decreases in the beginning and then goes on increasing, it may be a case of multiplication by fractional values.

Example: 8, 4, 4, 6, 12,

$$8 \times \frac{1}{2} = 4, 4 \times 1 = 4, 4 \times \frac{3}{2} = 6, 6 \times 2 = 12, \text{ and so on.}$$

- (iv) The given series may be a combination of two different series in the following cases:

(a) Fractional terms are given in the question with numerators forming one series and denominators forming another series.

(b) Series increases and then decreases and again increases and then decreases and so on.

Example: 15, 14, 19, 11, 23, 8, 27,

1st series $\div 15, 19, 23, 27, \dots$ 2nd series $\div 14, 11, 8, \dots$

(c) When more terms are given in the question as compared to normal cases.
 for example in case (b) above we have 7 terms given in the question. in such a situation check for the case of two different series being mixed.

Foundation**Questions**

Directions (1 - 40): What will come in place of question mark (?) in the following number series?

1. 2, 3, 5, 7, ?
 (a) 9 (b) 10 (c) 8
 (d) 11 (e) None of these
2. 1, 3, 6, 10, 15, ?
 (a) 17 (b) 18 (c) 20
 (d) 21 (e) None of these
3. 4, 9, 16, 25, ?
 (a) 49 (b) 30 (c) 36
 (d) 42 (e) None of these
4. 7, 11, 13, 17, 19, 23, ?
 (a) 18 (b) 28 (c) 27
 (d) 22 (e) None of these
5. 41, 43, 47, 53, 59, ?
 (a) 61 (b) 67 (c) 64
 (d) 65 (e) None of these
6. 3, 6, 11, 18, 27, ?
 (a) 29 (b) 35 (c) 38
 (d) 36 (e) None of these
7. 4, 9, 19, 34, 54, ?
 (a) 64 (b) 74 (c) 78
 (d) 79 (e) None of these
8. 2, 3, 5, 8, 12, ?
 (a) 13 (b) 14 (c) 15
 (d) 16 (e) None of these
9. 100, 81, 64, 49, ?
 (a) 48 (b) 46 (c) 40
 (d) 36 (e) None of these
10. 8, 27, 64, 125, 216, 343, ?
 (a) 443 (b) 612 (c) 512
 (d) 543 (e) None of these
11. 56, 63, 70, 77, ?
 (a) 84 (b) 91 (c) 80
 (d) 85 (e) None of these
12. 36, 48, 60, 72, ?
 (a) 80 (b) 78 (c) 84
 (d) 85 (e) None of these
13. 54, 72, 90, 108, ?
 (a) 110 (b) 115 (c) 120
 (d) 126 (e) None of these
14. 2, 4, 8, 16, 32, ?
 (a) 64 (b) 48 (c) 42
 (d) 45 (e) None of these

15. 3, 6, 12, 24, 48, ?
 (a) 64 (b) 70 (c) 94
 (d) 96 (e) None of these
16. 10, 14, 18, 22, ?
 (a) 23 (b) 25 (c) 30
 (d) 26 (e) None of these
17. 100, 99, 97, 94, 90, ?
 (a) 92 (b) 95 (c) 85
 (d) 93 (e) None of these
18. 3, 9, 27, 81, ?
 (a) 243 (b) 343 (c) 414
 (d) 425 (e) None of these
19. 24, 48, 72, 96, ?
 (a) 100 (b) 108 (c) 120
 (d) 140 (e) None of these
20. 78, 88, 99, 111, ?
 (a) 112 (b) 115 (c) 118
 (d) 124 (e) None of these
21. 512, 256, 128, 64, 32, ?
 (a) 26 (b) 30 (c) 16
 (d) 24 (e) 20
22. 1, 12, 123, 1234, ?
 (a) 123 (b) 12346 (c) 12345
 (d) 1235 (e) None of these
23. 123456, 23456, 2345, 345, ?
 (a) 34 (b) 45 (c) 35
 (d) 344 (e) None of these
24. 35, 49, 63, 77, ?
 (a) 91 (b) 93 (c) 95
 (d) 99 (e) None of these
25. 46, 52, 60, 70, ?
 (a) 83 (b) 82 (c) 81
 (d) 80 (e) None of these
26. 1, 11, 111, 1111, ?
 (a) 12 (b) 22 (c) 22222
 (d) 11111 (e) None of these
27. 1015, 508, 255, 129, 66.5, ?
 (a) 34.50 (b) 35 (c) 35.30
 (d) 35.75 (e) None of these
28. 4, 10, 33, 136, 685, ?
 (a) 3430 (b) 4110 (c) 4116
 (d) 3435 (e) None of these
29. 1, 9, 25, 49, ?, 121
 (a) 64 (b) 81 (c) 91
 (d) 100 (e) None of these
30. 4, 7, 12, 19, 28, ?
 (a) 30 (b) 36 (c) 39
 (d) 49 (e) None of these

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31. 11, 13, 17, 19, 23, 25, ?
 (a) 26 (b) 27 (c) 29
 (d) 37 (e) None of these
32. 6, 12, 21, ?, 48
 (a) 33 (b) 38 (c) 40
 (d) 45 (e) None of these
33. 2, 5, 9, ?, 20, 27
 (a) 14 (b) 16 (c) 18
 (d) 24 (e) None of these
34. 6, 11, 21, 36, 56, ?
 (a) 42 (b) 51 (c) 81
 (d) 24 (e) None of these
35. 10, 18, 28, 40, 54, 70, ?
 (a) 85 (b) 86 (c) 87
 (d) 88 (e) None of these

36. 120, 99, 80, 63, 48, ?
 (a) 35 (b) 38 (c) 39
 (d) 40 (e) None of these
37. 22, 24, 28, ?, 52, 84
 (a) 36 (b) 38 (c) 42
 (d) 46 (e) None of these
38. 125, 80, 45, 20, ?
 (a) 5 (b) 8 (c) 10
 (d) 12 (e) None of these
39. 1, 5, 13, 25, 41, ?
 (a) 51 (b) 57 (c) 61
 (d) 63 (e) None of these
40. 2, 15, 41, 80, ?
 (a) 111 (b) 120 (c) 121
 (d) 132 (e) None of these

Moderate

Directions (1 - 40): What will come in place of question mark (?) in the following number series?

1. 1, 2, 5, 10, 17, ?
 (a) 25 (b) 24 (c) 23
 (d) 26 (e) None of these
2. 4, 9, 25, 49, 121, ?
 (a) 144 (b) 169 (c) 139
 (d) 193 (e) None of these
3. 34, 36, 40, 48, 64, ?
 (a) 82 (b) 92 (c) 96
 (d) 98 (e) None of these
4. 9, 19, 40, 83, 170, 345, ?
 (a) 687 (b) 696 (c) 663
 (d) 645 (e) None of these
5. 980, 484, 236, 112, 50, ?
 (a) 25 (b) 17 (c) 21
 (d) 29 (e) None of these
6. 8, 9, 20, 63, 256, 1285, ?
 (a) 6430 (b) 7450 (c) 7716
 (d) 7746 (e) None of these
7. 4832, 5840, 6848, ?
 (a) 7815 (b) 7846 (c) 7856
 (d) 7887 (e) None of these
8. 10, 100, 200, 310, ?
 (a) 400 (b) 410 (c) 420
 (d) 430 (e) None of these
9. 6, 17, 39, 72, ?
 (a) 83 (b) 94 (c) 116
 (d) 127 (e) None of these
10. 325, 259, 204, 160, 127, 105, ?
 (a) 94 (b) 96 (c) 98
 (d) 100 (e) None of these

11. 1, 4, 10, 22, 46
 (a) 64 (b) 86 (c) 94
 (d) 122 (e) None of these
12. 0.5, 0.55, 0.65, 0.8, ?
 (a) 0.9 (b) 0.82 (c) 1
 (d) 0.95 (e) None of these
13. 5, 6, 9, 15, ?, 40
 (a) 21 (b) 25 (c) 27
 (d) 33 (e) None of these
14. 1, 9, 25, 49, 81, ?
 (a) 100 (b) 112 (c) 121
 (d) 144 (e) None of these
15. 1, 1, 4, 8, 9, 27, 16, ?
 (a) 32 (b) 64 (c) 81
 (d) 256 (e) None of these
16. 4, 12, 36, 108, ?
 (a) 144 (b) 216 (c) 304
 (d) 324 (e) None of these
17. 1, 1, 2, 6, 24, ?, 720
 (a) 100 (b) 104 (c) 108
 (d) 120 (e) None of these
18. 120, ?, 60, 20, 5, 1
 (a) 60 (b) 120 (c) 240
 (d) 180 (e) None of these
19. 4, 6, 9, ?
 (a) 13 (b) 19 (c) 11
 (d) 12 (e) None of these
20. 5760, 960, ?, 48, 16, 8
 (a) 120 (b) 160 (c) 192
 (d) 240 (e) None of these

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21. 1, 2, 6, 7, 21, 22, 66, 67, ?
 (a) 70 (b) 134 (c) 201
 (d) 301 (e) None of these
22. 48, 24, 96, 48, 192, ?
 (a) 76 (b) 90 (c) 96
 (d) 98 (e) None of these
23. 1, 2, 3, 6, 9, 18, ?, 54
 (a) 18 (b) 27 (c) 36
 (d) 81 (e) None of these
24. 165, 195, 255, 285, 345, ?
 (a) 375 (b) 390 (c) 420
 (d) 435 (e) None of these
25. 9, 27, 31, 155, 161, 1127, ?
 (a) 316 (b) 1135 (c) 1288
 (d) 2254 (e) None of these
26. 2, 3, 3, 5, 10, 13, ?, 43, 172, 177
 (a) 23 (b) 38 (c) 39
 (d) 40 (e) None of these
27. 3, 15, ?, 63, 99, 143
 (a) 27 (b) 35 (c) 45
 (d) 56 (e) None of these
28. 7, 26, 63, 124, 215, 342, ?
 (a) 391 (b) 421 (c) 481
 (d) 511 (e) None of these
29. 3, 7, 15, ?, 63, 127
 (a) 30 (b) 31 (c) 47
 (d) 52 (e) None of these
30. 4, 10, ?, 82, 244, 730
 (a) 24 (b) 28 (c) 77
 (d) 218 (e) None of these

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31. 3, 12, 27, 48, 75, 108, ?
 (a) 147 (b) 162 (c) 183
 (d) 192 (e) None of these
32. 563, 647, 479, 815, ?
 (a) 672 (b) 386 (c) 279
 (d) 143 (e) None of these
33. 5, 2, 7, 9, 16, 25, ?
 (a) 41 (b) 45 (c) 48
 (d) 52 (e) None of these
34. 10, 14, 26, 42, 70, ?
 (a) 100 (b) 102 (c) 106
 (d) 114 (e) None of these
35. 2, 8, 16, 128, ?
 (a) 2042 (b) 2046 (c) 2048
 (d) 2056 (e) None of these
36. 3, 10, 101, ?
 (a) 10101 (b) 10201 (c) 10202
 (d) 11012 (e) None of these
37. 589654237, 89654237, 8965423, 965423, ?
 (a) 58965 (b) 65423 (c) 89654
 (d) 96542 (e) None of these
38. 5824, 5242, ?, 4247, 3823
 (a) 4467 (b) 4718 (c) 4856
 (d) 5164 (e) None of these
39. 1, 3, 4, 8, 15, 27, ?
 (a) 37 (b) 44 (c) 50
 (d) 55 (e) None of these
40. 66, 36, 18, ?
 (a) 3 (b) 6 (c) 8
 (d) 9 (e) None of these

Difficult

Directions (1 - 10): What will come in place of question mark (?) in the following number series?

1. 0, 4, 6, 3, 7, 9, 6, ?, 12
 (a) 8 (b) 10 (c) 11
 (d) 12 (e) None of these
2. 8, 9, 8, 7, 10, 9, 6, 11, 10, ?, 12
 (a) 5 (b) 7 (c) 8
 (d) 11 (e) None of these
3. 7, 4, 5, 9, ?, 52.5, 160.5
 (a) 18 (b) 19.5 (c) 20
 (d) 20.5 (e) None of these
4. 5, 348, 564, 689, ?, 780, 788
 (a) 348 (b) 689 (c) 753
 (d) 780 (e) 788
5. 4.5, 16, ?, 33, 38.5, 42, 43.5
 (a) 16 (b) 25.5 (c) 33
 (d) 38.5 (e) 42

6. 14, 18, 82, 118, 630, ?
 (a) 730 (b) 692 (c) 711
 (d) 682 (e) None of these
7. 35, 76, 253, 488, 911, ?
 (a) 1210 (b) 1325 (c) 1460
 (d) 1575 (e) 1680
8. 19, 97, 162, 214, 253, ?
 (a) 277 (b) 279 (c) 224
 (d) 280 (e) None of these
9. 9, 15, 26, 42, 63, ?
 (a) 79 (b) 87 (c) 89
 (d) 77 (e) None of these
10. 6, 10, 37, 53, 178, ?
 (a) 210 (b) 212 (c) 214
 (d) 226 (e) None of these

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Directions (11 - 14): In each of the following questions a number series is given. After the series a number is given followed by (a), (b), (c), (d) and (e). You have to complete the series starting with the number given, following the sequence of the original series and answer the questions that follow the series.

11. 12 30 120 460 1368 ?
 16 (a) (b) (c) (d) (e)
 What will come in place of (d)?
 (a) 1384 (b) 2642 (c) 2808
 (d) 1988 (e) None of these
12. 7 91 1001 7007 35035 ?
 14.5 (a) (b) (c) (d) (e)
 What will come in place of (c)?
 (a) 21132.5 (b) 14514.5 (c) 20020.5
 (d) 13864.5 (e) None of these
13. 582 574 601 537 662 ?
 204 (a) (b) (c) (d) (e)
 What will come in place of (d)?
 (a) 284 (b) 68 (c) 174
 (d) 331 (e) None of these
14. 85 43 44 67.5 137 ?
 125 (a) (b) (c) (d) (e)
 What will come in place of (c)?
 (a) 86 (b) 107.5 (c) 112.5
 (d) 97.5 (e) None of these

Directions (15 - 25): What will come in place of the question mark (?) in the following number series?

15. 1 6 36 ? 1960 ?
 (a) 19660 (b) 3680 (c) 36800
 (d) 19600 (e) None of these
16. 949 189.8 ? 22.776 11.388 6.8328
 (a) 48.24 (b) 53.86 (c) 74.26
 (d) 56.94 (e) None of these
17. 14 43.5 264 ? 76188
 (a) 3168 (b) 3176 (c) 1587
 (d) 1590 (e) None of these
18. 41 164 2624 ? 6045696
 (a) 104244 (b) 94644 (c) 94464
 (d) 102444 (e) None of these
19. 12 12 18 45 180 1170 ?
 (a) 12285 (b) 10530 (c) 11700
 (d) 12870 (e) 7605
20. 40280625 732375 16275 465 18.6 1.24 ?
 (a) 0.248 (b) 0.336 (c) 0.424
 (d) 0.512 (e) 0.639
21. 14 12 21 ? 59 231 1149 ?
 (a) 6987 (b) 6787 (c) 6887
 (d) 6687 (e) 6587

22. 1728 2744 4096 5832 8000 10648 ?
 (a) 12167 (b) 13824 (c) 15625
 (d) 9261 (e) 17576
23. 120 15 105 17.5 87.5 ?
 (a) 18.5 (b) 19.5 (c) 21.875
 (d) 17.5 (e) 90
24. 3 6 21 28 55 66 ? 120
 (a) 103 (b) 104 (c) 108
 (d) 106 (e) 105
25. 529 841 961 1369 1681 1849 ?
 (a) 2809 (b) 2601 (c) 3249
 (d) 3481 (e) 2209

Directions (26 - 29): In the following number series only one number is wrong. Find out the wrong number.

26. 3 35 226 1160 4660 13998
 (a) 13998 (b) 4660 (c) 226
 (d) 1160 (e) None of these
27. 18 119 708 3534 14136 42405
 (a) 708 (b) 3534 (c) 14136
 (d) 42405 (e) None of these
28. 4 6 18 49 201 1011
 (a) 1011 (b) 201 (c) 18
 (d) 49 (e) None of these
29. 2 54 300 1220 3674 7350
 (a) 3674 (b) 1220 (c) 300
 (d) 54 (e) None of these

Directions (30 - 40): What should come in place of the question mark (?) in the following number series?

30. 0 5 18 43 84 145 ?
 (a) 220 (b) 240 (c) 260
 (d) 280 (e) None of these
31. 10 17 48 165 688 3475 ?
 (a) 27584 (b) 25670 (c) 21369
 (d) 20892 (e) None of these
32. 1 3 24 360 8640 302400 ?
 (a) 14525100 (b) 154152000 (c) 14515200
 (d) 15425100 (e) None of these
33. 12 14 32 102 416 2090 ?
 (a) 15522 (b) 12552 (c) 13525
 (d) 17552 (e) None of these
34. 10 15 15 12.5 9.375 6.5625 ?
 (a) 4.375 (b) 3.2375 (c) 4.6275
 (d) 3.575 (e) None of these
35. 3 22 ? 673 2696 8093
 (a) 133 (b) 155 (c) 156
 (d) 134 (e) None of these
36. 6 13 38 ? 532 2675
 (a) 129 (b) 123 (c) 172
 (d) 164 (e) None of these

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37. 17 9 ? 16.5 35 90
 (a) 5 (b) 15 (c) 10
 (d) 20 (e) None of these
38. 3 4 12 ? 196
 (a) 45 (b) 40 (c) 41
 (d) 49 (e) None of these

39. 16 8 12 30 ?
 (a) 75 (b) 105 (c) 95
 (d) 115 (e) None of these
40. 7 12 32 105 ?
 (a) 428 (b) 214 (c) 218
 (d) 416 (e) None of these

QUANTITATIVE APTITUDE

Directions (1 - 21): What will come in place of question mark (?) in the following series?

1. 4, 9, 25, ?, 121, 169, 289, 361

- (a) 49 (b) 64 (c) 81
 (d) 87 (e) None of these

2. 3, 8, 13, 24, 41, ?

- (a) 70 (b) 75 (c) 80
 (d) 85 (e) None of these

3. 45, 54, 47, ?, 49, 56, 51, 57, 53

- (a) 48 (b) 50 (c) 55
 (d) 45 (e) None of these

4. 6, 18, 3, 21, 7, 56, ?

- (a) 8 (b) 9 (c) 63
 (d) 64 (e) None of these

5. 2, 15, 4, 12, 6, 7, ?, ?

- (a) 8, 8 (b) 8, 0 (c) 3, 8
 (d) 8, 4 (e) None of these

6. 20, 20, 19, 16, 17, 13, 14, 11, ?, ?

- (a) 10, 10 (b) 10, 11 (c) 13, 14
 (d) 13, 16 (e) None of these

7. 0, 2, 3, 5, 8, 10, 15, 17, 24, 26, ?

- (a) 28 (b) 30 (c) 32
 (d) 35 (e) None of these

8. 13, 35, 57, 79, 911, ?

- (a) 1110 (b) 1112 (c) 1113
 (d) 1315 (e) None of these

9. 625, 5, 125, 25, 25, ?, 5

- (a) 5 (b) 25 (c) 125
 (d) 625 (e) None of these

10. 3, 4, 7, 7, 13, 13, 21, 22, 31, 34, ?

- (a) 42 (b) 43 (c) 51
 (d) 52 (e) None of these

11. 11, 10, ?, 100, 1001, 1000, 10001

- (a) 101 (b) 102 (c) 103
 (d) 104 (e) None of these

Previous Year (Memory Based)

12. 13, 32, 24, 43, 35, ?, 46, 65, 57, 76
 (a) 45 (b) 52 (c) 54
 (d) 55 (e) None of these

13. 2, 1, 2, 4, 4, 5, 6, 7, 8, 8, 10, 11, ?
 (a) 9 (b) 10 (c) 11
 (d) 12 (e) None of these

14. $\frac{2}{3}, \frac{4}{7}, ?, \frac{11}{21}, \frac{16}{31}$
 (a) $\frac{5}{9}$ (b) $\frac{6}{11}$ (c) $\frac{7}{13}$
 (d) $\frac{9}{17}$ (e) None of these

15. 960 924 852 744 600 420 ?
 (a) 202 (b) 203 (c) 204
 (d) 205 (e) 206

16. 1800, 540, 162, 48.6, ?
 (a) 14.3 (b) 14.68 (c) 14.58
 (d) 14.39 (e) None of these

17. 280, 284, 300, ?, 400, 500
 (a) 335 (b) 366 (c) 336
 (d) 338 (e) 340

18. 4, 5, 14, 51, ?, 1125
 (a) 216 (b) 218 (c) 220
 (d) 227 (e) None of these

19. 8, 47, 234, 935, ?, 5607
 (a) 2804 (b) 2802 (c) 2808
 (d) 2801 (e) 2807

20. 6, 9, 15, 27, 51, ?
 (a) 84 (b) 75 (c) 99
 (d) 123 (e) None of these

21. 7, 8, 18, ?, 232, 1165
 (a) 84 (b) 42 (c) 36
 (d) 57 (e) None of these

Directions (22 - 26): In the following number series, a wrong number is given. Find out that wrong number.

NUMBER SERIES

22. 11, 18, 29, 42, 59, 80, 101
 (a) 18 (b) 29 (c) 42
 (d) 59 (e) 80
23. 2, 9, 32, 105, 436, 2195
 (a) 9 (b) 32 (c) 105
 (d) 436 (e) 2195
24. 5, 55, 495, 3465, 17325, 34650, 51975
 (a) 55 (b) 495 (c) 3465
 (d) 17325 (e) 34650
25. 2, 10, 18, 54, 162, 486, 1458
 (a) 10 (b) 18 (c) 54
 (d) 162 (e) 486
26. 8, 12, 24, 46, 72, 108, 152
 (a) 12 (b) 24 (c) 46
 (d) 72 (e) 108

Directions (27 - 29): What will come in place of question mark (?) in the following number series?

27. 16, 22, 40, 78, 144, ?
 (a) 244 (b) 241 (c) 254
 (d) 246 (e) None of these
28. 2, 6, 14, 30, ?, 126, 254
 (a) 81 (b) 65 (c) 62
 (d) 69 (e) None of these
29. 10, 14, 25, 55, 140, ?
 (a) 386 (b) 398 (c) 388
 (d) 396 (e) None of these

Directions (30 - 34): In the following number series, a wrong number is given. Find out that wrong number.

30. 2 11 38 197 1172 8227 65806
 (a) 11 (b) 2 (c) 197
 (d) 1172 (e) 8227

QUANTITATIVE APTITUDE

31. 16 19 21 30 46 71 107
 (a) 19 (b) 21 (c) 30
 (d) 46 (e) 71
32. 7 9 16 25 41 68 107 173
 (a) 107 (b) 16 (c) 41
 (d) 68 (e) 25
33. 4 2 3.5 7.5 26.25 118.125
 (a) 118.125 (b) 26.25 (c) 3.5
 (d) 2 (e) 7.5
34. 16 4 2 1.5 1.75 1.875
 (a) 1.875 (b) 1.75 (c) 1.5
 (d) 2 (e) 4

Directions (35 - 40): What will come in place of the question mark (?) in the following number series?

35. 3 10 32 100 ?
 (a) 345 (b) 460 (c) 308
 (d) 440 (e) None of these
36. 5 3 4 ? 38
 (a) 8.5 (b) 6 (c) 7.5
 (d) 8 (e) None of these
37. 5 6 ? 57 244
 (a) 21 (b) 16 (c) 17
 (d) 15 (e) None of these
38. 3 10 21 ? 51
 (a) 34 (b) 32 (c) 33
 (d) 37 (e) None of these
39. 5 11 ? 55 117
 (a) 21 (b) 27 (c) 23
 (d) 25 (e) None of these
40. 12 14 17 13 8 14 21 13 4 ?
 (a) 14 (b) 13 (c) 15
 (d) 2 (e) None of these

Foundation**Solutions**

- (d); It is prime number series. next prime number is 11.
- (d); $1+2=3, 3+3=6, 6+4=10, 10+5=15, 15+6=21$
- (c); $2^2, 3^2, 4^2, 5^2$. Next number is $6^2 = 36$.
- (e); 7, 11, 13, 17, 19, 23
Prime numbers. Next prime number is 29.
- (a); 41, 43, 47, 53, 59, ? ; Next prime number is 61.
- (c); $3+3=6, 6+5=11, \dots$

$$+3, +5, +7, +9, +11$$

So, the next number is $27 + 11 = 38$

7. (d); $+5, +10, +15, +20$

So, the next number is $54 + 25 = 79$

8. (e); $+1, +2, +3, +4$

So, the next number is $12 + 5 = 17$

9. (d); $10^2, 9^2, 8^2, 7^2$; The next number is $6^2 = 36$

10. (c); $2^3, 3^3, 4^3, 5^3, 6^3, 7^3$; Next is $8^3 = 512$

11. (a); $+7, +7, +7, \dots$

So, next in the series is $77 + 7 = 84$

12. (c); $+12, +12, +12, \dots$

So, the next number is $72 + 12 = 84$

NUMBER SERIES

13. (d); Each number increases by 18.
So, the next one is : $108 + 18 = 126$
 $2^1, 2^2, 2^3, 2^4, 2^5, \dots$
14. (a); So, the next one is $2^6 = 64$.
15. (d); The previous number is multiplied by 2 to obtain the next number.
So, the next number is : $48 \times 2 = 96$
16. (d); 4 is being added to each number.
So, the next number is $22 + 4 = 26$
17. (c); $-1, -2, -3, -4, \dots$
The next number is $90 - 5 = 85$
18. (a); $3^1, 3^2, 3^3, 3^4$; Next $\rightarrow 3^5 = 243$
19. (c); $24 \times 1, 24 \times 2, 24 \times 3, 24 \times 4$; Next is $24 \times 5 = 120$
20. (d); $78 + 10, 88 + 11, 99 + 12$; Next is $111 + 13 = 124$
21. (c); Each term is divided by 2 to obtain the next term so, the next term is : $32 \div 2 = 16$.
22. (c); $1, 12, 123, 1234$; Next is 12345
23. (a); Remove one digit alternatively from left and right
Next is 34
24. (a); $7 \times 5, 7 \times 7, 7 \times 9, 7 \times 11$; Next is $7 \times 13 = 91$
25. (b); $+6, +8, +10$; Next is $70 + 12 = 82$
26. (d); $1, 11, 111, 1111$; Next is 11111
27. (d); $\frac{1015+1}{2} = 508, \frac{508+2}{2} = 255$
- $\frac{255+3}{2} = 129, \frac{129+4}{2} = 66.5$,

QUANTITATIVE APTITUDE

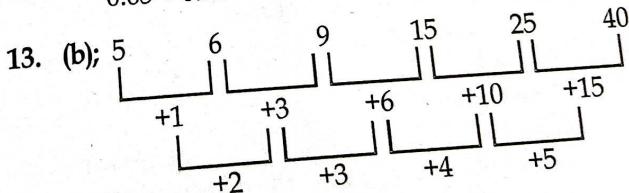
28. (c); Next term is $\frac{66.5 + 5}{2} = 35.75$
 $10 \times 3 + 3 = 33$
 $33 \times 4 + 4 = 136$
 $136 \times 5 + 5 = 685$
 $685 \times 6 + 6 = 4116$
29. (b); $1^2, 3^2, 5^2, 7^2, 9^2, 11^2 \rightarrow$ Squares of consecutive odd numbers. $9^2 = 81$
30. (c); $+3, +5, +7, +9$; Next is $28 + 11 = 39$
31. (c); $+2, +4, +2, +4, +2$; Next is $25 + 4 = 29$
32. (a); $+6, +9, +12, +15$; $21 + 12 = 33$
33. (a); $+3, +4, +5, +6, +7$; $? = 9 + 5 = 14$
34. (c); $+5, +10, +15, +20$; Next is $+25, 56 + 25 = 81$
35. (d); $+8, +10, +12, +14, +16$; Next is $70 + 18 = 88$
36. (a); $-21, -19, -17, -15$; Next is $48 - 13 = 35$
37. (a); $+2^1, +2^2, +2^3, +2^4, +2^5$
The missing number is $\rightarrow 36$
38. (a); $125 - 45 = 80, 80 - 35 = 45$
 $45 - 25 = 20, 20 - 15 = 5$
39. (c); $1 + 4 = 5, 5 + 8 = 13, 13 + 12 = 25$,
 $25 + 16 = 41, 41 + 20 = 61$
40. (d); $2 + 13 = 15, 15 + 26 = 41$,
 $41 + 39 = 80, 80 + 52 = 132$

Moderate

adda247

1. (d); $0^2 + 1 = 1$
 $1^2 + 1 = 2$
 $2^2 + 1 = 5$
 $3^2 + 1 = 10$
 $4^2 + 1 = 17$
 $5^2 + 1 = 26$
2. (b); Squares of Prime numbers.
 $2^2, 3^2, 5^2, 7^2, 11^2$; Next is $13^2 \rightarrow 169$
3. (c); $34 + 2 = 36, 36 + 2^2 = 40, 40 + 2^3 = 48$,
 $48 + 2^4 = 64, 64 + 2^5 = 96$
4. (b); $9 \times 2 + 1 = 19$
 $19 \times 2 + 2 = 40$
 $40 \times 2 + 3 = 83$
 $83 \times 2 + 4 = + 170$
 $170 \times 2 + 5 = 345$
 $345 \times 2 + 6 = 696$
5. (e); $980 \div 2 - 6 = 484, 484 \div 2 - 6 = 236$
 $236 \div 2 - 6 = 112, 112 \div 2 - 6 = 50$
 $50 \div 2 - 6 = 19$
6. (c); $8 \times 1 + 1 = 9, 9 \times 2 + 2 = 20, 20 \times 3 + 3 = 63$
 $63 \times 4 + 4 = 256, 256 \times 5 + 5 = 1285$
 $1285 \times 6 + 6 = 7716$

7. (c); $4832 + 1008 = 5840$
 $5840 + 1008 = 6848$
 $6848 + 1008 = 7856$
8. (d); $10 + 90 = 100, 100 + 100 = 200, 200 + 110 = 310$
 $310 + 120 = 430$
9. (c); $6 + 11 = 17, 17 + 22 = 39, 39 + 33 = 72$,
 $72 + 44 = 116$
10. (a); $325 - 66 = 259, 259 - 55 = 204$,
 $204 - 44 = 160, 160 - 33 = 127$,
 $127 - 22 = 105, 105 - 11 = 94$
11. (c); $1 + 3 = 4, 4 + 6 = 10, 10 + 12 = 22$,
 $22 + 24 = 46, 46 + 48 = 94$
12. (c); $0.5 + 0.05 = 0.55, 0.55 + 0.10 = 0.65$,
 $0.65 + 0.15 = 0.80, 0.80 + 0.20 = 1.0$



14. (c); $1^2, 3^2, 5^2, 7^2, 9^2$; Next is $11^2 = 121$
15. (b); Two series are mixed. First series: 1, 4, 9, 16
Second series: 1, 8, 27, ?
So, the next term is : $4^3 = 64$

16. (d); $4 \times 3 = 12$, $12 \times 3 = 36$, $36 \times 3 = 108$, $108 \times 3 = 324$
 17. (d); $1 \times 1 = 1$, $1 \times 2 = 2$, $2 \times 3 = 6$, $6 \times 4 = 24$, $24 \times 5 = 120$,
 $120 \times 6 = 720$

18. (b); $120 \div 1 = 120$, $120 \div 2 = 60$, $60 \div 3 = 20$, $20 \div 4 = 5$,
 $5 \div 5 = 1$

19. (a); $4 + 2 = 6$, $6 + 3 = 9$, $9 + 4 = 13$

20. (c); $5760 \div 6 = 960$, $960 \div 5 = 192$, $192 \div 4 = 48$,
 $48 \div 3 = 16$, $16 \div 2 = 8$

21. (c); $1 + 1 = 2$, $2 \times 3 = 6$, $6 + 1 = 7$, $7 \times 3 = 21$, $21 + 1 = 22$,
 $22 \times 3 = 66$, $66 + 1 = 67$, $67 \times 3 = 201$

22. (c); $48 \div 2 = 24$, $24 \times 4 = 96$, $96 \div 2 = 48$, $48 \times 4 = 192$,
 $192 \div 2 = 96$

23. (b); Two series mixed

First series : 1, 3, 9, ?

Second series : 2, 6, 18, 54

So, the missing term is $\rightarrow 3^3 = 27$.

24. (a); $165 + 30 = 195$, $195 + 60 = 255$, $255 + 30 = 285$,
 $285 + 60 = 345$
 Next $\rightarrow 345 + 30 = 375$

25. (b); $9 \times 3 = 27$, $27 \times 4 = 31$, $31 \times 5 = 155$, $155 + 6 = 161$,
 $161 \times 7 = 1127$, $1127 + 8 = 1135$

26. (c); $2 + 1 = 3$, $3 \times 1 = 3$, $3 + 2 = 5$, $5 \times 2 = 10$, $10 + 3 = 13$,
 $13 \times 3 = 39$, $39 + 4 = 43$, $43 \times 4 = 172$, $172 + 5 = 177$

27. (b); $2^2 - 1$, $4^2 - 1$, $6^2 - 1$, $8^2 - 1$, $10^2 - 1$, $12^2 - 1$,
 Missing term $= 6^2 - 1 = 35$

28. (d); $2^3 - 1$, $3^3 - 1$, $4^3 - 1$, $5^3 - 1$, $6^3 - 1$, $7^3 - 1$
 Next $\rightarrow 8^3 - 1 = 511$

29. (b); $3 \times 2 + 1 = 7$, $7 \times 2 + 1 = 15$, $15 \times 2 + 1 = 31$,
 $31 \times 2 + 1 = 63$, $63 \times 2 + 1 = 127$
 Missing term $= 31$

30. (b); $4 \times 3 - 2 = 10$, $10 \times 3 - 2 = 28$, $28 \times 3 - 2 = 82$,
 $82 \times 3 - 2 = 244$, $244 \times 3 - 2 = 730$
 Missing term $= 28$

31. (a);

3	12	27	48	75	108	147
+9	+15	+21	+27	+33	+39	
+6	+6	+6	+6	+6	+6	

So, the next term is 147

Difficult

1. (b); It is a combination of 3 series.

1st series : 0, 3, 6, ...

2nd series : 4, 7, ?

3rd series : 6, 9, 12,

In the 2nd series, each term is increased by 3 to obtain the next term. So, the missing term is $7 + 3 = 10$

2. (a); It is a combination of 3 series.

1st series : 8, 7, 6, ?

2nd series : 9, 10, 11, 12

3rd series : 8, 9, 10,

So, the missing term is $6 - 1 = 5$

3. (c); $7 \times \frac{1}{2} + \frac{1}{2} = 4$, $4 \times 1 + 1 = 5$

$$5 \times \frac{3}{2} + \frac{3}{2} = 9, \quad 9 \times 2 + 2 = 20$$

So, the missing term is 20.

4. (c); $5 + 343 = 5 + 7^3 = 348$
 $348 + 216 = 348 + 6^3 = 564$

NUMBER SERIES

$$564 + 125 = 564 + 5^3 = 689$$

$$689 + 64 = 689 + 4^3 = 753$$

5. (b); $4.5 + 11.5 = 16$

$$16 + 9.5 = 25.5$$

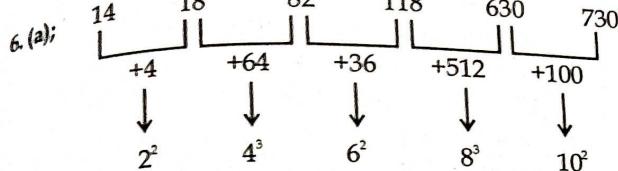
$$25.5 + 7.5 = 33$$

$$33 + 5.5 = 38.5$$

$$38.5 + 3.5 = 42$$

$$42 + 1.5 = 43.5$$

$$\text{So, the missing term is } 25.5$$



7. (c); $5 \times 2^2 + 15 = 35$
 $10 \times 3^2 - 14 = 76$
 $15 \times 4^2 + 13 = 253$
 $20 \times 5^2 - 12 = 488$
 $25 \times 6^2 + 11 = 911$
 $30 \times 7^2 - 10 = 1460$
 $\text{So, next term is } 1460$

8. (b); $19 + 13 \times 6 = 97$
 $97 + 13 \times 5 = 162$
 $162 + 13 \times 4 = 214$
 $214 + 13 \times 3 = 253$
 $253 + 13 \times 2 = 279$
9. (c); $+6, +11, +16, +21, +26$
 $63 + 26 = 89$

10. (c); $+2^2, +3^3, +4^2, +5^3, +6^2$
 $178 + 36 = 214$

11. (c); The given series is based on the pattern:
 $30 = 12 \times 6 - 7 \times 6$
 $120 = 30 \times 5 - 6 \times 5$
 $460 = 120 \times 4 - 5 \times 4$
 $1368 = 460 \times 3 - 4 \times 3$
 $2730 = 1368 \times 2 - 3 \times 2$

Similarly,

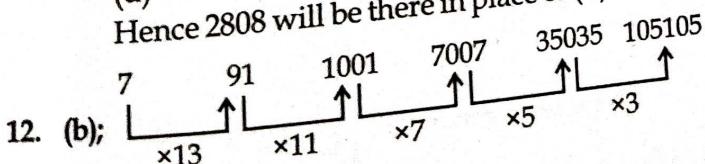
$$(a) = 16 \times 6 - 7 \times 6 = 96 - 42 = 54$$

$$(b) = 54 \times 5 - 6 \times 5 = 240$$

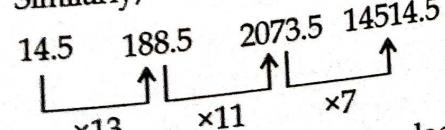
$$(c) = 240 \times 4 - 5 \times 4 = 940$$

$$(d) = 940 \times 3 - 4 \times 3 = 2808$$

Hence 2808 will be there in place of (d).

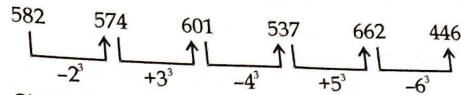


Similarly,

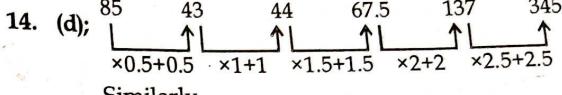
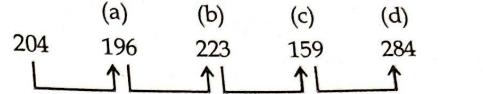


Hence, 14514.5 will come in place of (c).

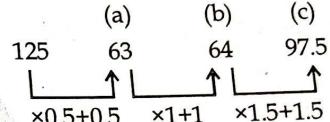
13. (a); The given series is based on the following pattern:



Similarly,

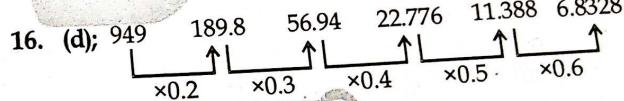


Similarly,



Hence, 97.5 will come in place of (c).

15. (a); $1 \times 2 + 2 \times 2 = 6$
 $6 \times 4 + 4 \times 3 = 36$
 $36 \times 6 + 6 \times 4 = 240$
 $240 \times 8 + 8 \times 5 = 1960$
 $1960 \times 10 + 10 \times 6 = 19660$



Hence, missing term $\Rightarrow 56.94$

17. (e); $14 \times 3 + 1.5 = 43.5$
 $43.5 \times 6 + 1.5 \times 2 = 264$
 $264 \times 12 + 1.5 \times 4 = 3174$
 $3174 \times 24 + 1.5 \times 8 = 76188$

Hence, missing term is 3174.

18. (c); $41 \times 2^2 = 164$
 $164 \times 4^2 = 2624$
 $2624 \times 6^2 = 94464$
 $94464 \times 8^2 = 6045696$

19. (a); $12 \times 1 = 12$

$$\begin{aligned} 12 \times 1.5 &= 18 \\ 18 \times (1 + 1.5) &= 18 \times 2.5 = 45 \\ 45 \times (1.5 + 2.5) &= 45 \times 4 = 180 \\ 180 \times (4 + 2.5) &= 180 \times 6.5 = 1170 \end{aligned}$$

So, next term is:

$$1170 \times (4 + 6.5) = 12285$$

20. (a); $40280625 \div 55 = 732375$
 $732375 \div 45 = 16275$
 $16275 \div 35 = 465$
 $465 \div 25 = 18.6$

NUMBER SERIES

$$18.6 + 15 = 1.24 \\ \text{So, next term} = 1.24 + 5 = 0.248 \\ \text{So, next term is } 0.248$$

21. (c) $14 \times 1 - 2 = 14 - 2 = 12$
 $12 \times 2 - 3 = 24 - 3 = 21$
 $21 \times 3 - 4 = 63 - 4 = 59$
 $59 \times 4 - 5 = 236 - 5 = 231$
 $231 \times 5 - 6 = 1155 - 6 = 1149$
 So, next term is:
 $1149 \times 6 - 7 = 6894 - 7 = 6887$

22. (b) $12 \times 12 \times 12 = 1728$
 $14 \times 14 \times 14 = 2744$
 $16 \times 16 \times 16 = 4096$
 $18 \times 18 \times 18 = 5832$
 $20 \times 20 \times 20 = 8000$
 $22 \times 22 \times 22 = 10648$
 So, next term $\rightarrow 24 \times 24 \times 22 = 13824$

23. (c) $120 \div 8 = 15$
 $15 \div 7 = 105$
 $105 \div 6 = 17.5$
 $17.5 \times 5 = 87.5$
 Next term $\rightarrow 87.5 \div 4 = 21.875$

24. (e)

3	6	21	28	55	66	?	120
\uparrow							
+3	+7	+11			+15		

So, missing term is 105

25. (e) $529 = 23 \times 23$
 $841 = 29 \times 29$
 $961 = 31 \times 31$
 $1369 = 37 \times 37$
 $1681 = 41 \times 41$
 $1849 = 43 \times 43$
 Next term $\rightarrow 47 \times 47 = 2209$

[The numbers are formed by squaring the prime numbers greater than or equal to 23]

26. (c) $3 \times 7 + 2 \times 7 = 21 + 14 = 35$
 $35 \times 6 + 3 \times 6 = 210 + 18 = 228 \neq 226$
 $228 \times 5 + 4 \times 5 = 1140 + 20 = 1160$
 $1160 \times 4 + 5 \times 4 = 4640 + 20 = 4660$
 $4660 \times 3 + 6 \times 3 = 13980 + 18 = 13998$
 Hence, wrong number is 226

27. (b) $18 \times 7 - 7 = 126 - 7 = 119$
 $119 \times 6 - 6 = 714 - 6 = 708$
 $708 \times 5 - 5 = 3540 - 5 = 3535 \neq 3534$
 $3535 \times 4 - 4 = 14140 - 4 = 14136$
 Hence, 3534 is the wrong number

28. (c) $4 \times 1 + 2 = 4 + 2 = 6$
 $6 \times 2 + 3 = 12 + 3 = 15 \neq 18$
 $15 \times 3 + 4 = 45 + 4 = 49$
 $49 \times 4 + 5 = 196 + 5 = 201$
 $201 \times 5 + 6 = 1005 + 6 = 1011$

29. (a) $2 \times 6 + 7 \times 6 = 12 + 42 = 54$
 $54 \times 5 + 6 \times 5 = 270 + 30 = 300$
 $300 \times 4 + 5 \times 4 = 1200 + 20 = 1220$
 $1220 \times 3 + 4 \times 3 = 3660 + 12 = 3672 \neq 3674$
 $3672 \times 2 + 3 \times 2 = 7344 + 6 = 7350$

30. (e) $0 + 5 = 5$
 $5 + 13 = 18$
 $18 + 25 = 43$
 $43 + 41 = 84$
 $84 + 61 = 145$
 Next term $= 145 + 85 = 230$

31. (d) $10 \times 1 + 1 \times 7 = 10 + 7 = 17$
 $17 \times 2 + 2 \times 7 = 34 + 14 = 48$
 $48 \times 3 + 3 \times 7 = 144 + 21 = 165$
 $165 \times 4 + 4 \times 7 = 660 + 28 = 688$
 $688 \times 5 + 5 \times 7 = 3440 + 35 = 3475$
 Next term $\rightarrow 3475 \times 6 + 6 \times 7 = 20850 + 42 = 20892$

32. (c) $1 \times 3 = 3$
 $3 \times 8 = 24$
 $24 \times 15 = 360$
 $360 \times 24 = 8640$
 $8640 \times 35 = 302400$
 Next term $\rightarrow 302400 \times 48 = 14515200$

33. (b) $12 \times 1 + 2 \times 1 = 12 + 2 = 14$
 $14 \times 2 + 2 \times 2 = 28 + 4 = 32$
 $32 \times 3 + 2 \times 3 = 96 + 6 = 102$
 $102 \times 4 + 2 \times 4 = 408 + 8 = 416$
 $416 \times 5 + 2 \times 5 = 2080 + 10 = 2090$
 Next term $\rightarrow 2090 \times 6 + 2 \times 6 = 12540 + 12 = 12552$

34. (a) $10 \times \frac{3}{2} = 15$

$$15 \times \frac{4}{4} = 15$$

$$15 \times \frac{5}{6} = 12.5$$

$$12.5 \times \frac{6}{8} = 9.375$$

$$9.375 \times \frac{7}{10} = 6.5625$$

$$\text{Next term} = 6.5625 \times \frac{8}{12} = 4.375$$

35. (d) $3 \times 7 + 1 = 21 + 1 = 22$
 $22 \times 6 + 2 = 132 + 2 = 134$
 $134 \times 5 + 3 = 670 + 3 = 673$
 $673 \times 4 + 4 = 2692 + 4 = 2696$
 So, the missing term is 134

36. (a); $6 \times 1 + 1 \times 7 = 6 + 7 = 13$
 $13 \times 2 + 2 \times 6 = 26 + 12 = 38$
 $38 \times 3 + 3 \times 5 = 114 + 15 = 129$
 $129 \times 4 + 4 \times 4 = 516 + 16 = 532$
 $129 \times 0.5 + 0.5 = 9$

37. (c); $17 \times 0.5 + 1 = 10$
 $9 \times 1 + 1 = 10$
 $10 \times 1.5 + 1.5 = 16.5$
 $16.5 \times 2 + 2 = 35$

- So, the missing term is 10
38. (a); $3 \times 1 + 1^2 = 3 + 1 = 4$
 $4 \times 2 + 2^2 = 8 + 4 = 12$
 $12 \times 3 + 3^2 = 36 + 9 = 45$
 $45 \times 4 + 4^2 = 180 + 16 = 196$
So, missing term is 45

39. (b); $16 \times 0.5 = 8, 8 \times 1.5 = 12$
 $12 \times 2.5 = 30, 30 \times 3.5 = 105$
40. (a); $7 \times 1 + 1 \times 5 = 12$
 $12 \times 2 + 2 \times 4 = 32$
 $32 \times 3 + 3 \times 3 = 105$
 $105 \times 4 + 4 \times 2 = 428$
So, the next term is 428.

Previous Year (Memory Based)

1. (a); The given terms are squares of consecutive prime numbers.
 $2^2, 3^2, 5^2, ?, 11^2, 13^2, 17^2, 19^2$
So, the missing term is $7^2 = 49$
2. (a); The pattern is:
 n^{th} term + $(n+1)^{\text{th}}$ term + $(n+1)$ = $(n+2)^{\text{th}}$ term
 3^{rd} term = 1^{st} term + 2^{nd} term + 2.
 4^{th} term = 2^{nd} term + 3^{rd} term + 3.
Missing term = 6^{th} term = 4^{th} term + 5^{th} term + 5
= $24 + 41 + 5 = 70$.
3. (c); It is a combination of two series:
First series: 45, 47, 49, 51, 53.
Second series: 54, ?, 56, 57
Second series consists of consecutive natural numbers.
So, missing term = 55.
4. (a); Terms on even places are product of their adjacent terms.
 $6 \times 3 = 18$
 $3 \times 7 = 21$
 $7 \times ? = 56$
So, next term = 8.
5. (b); It is a combination of two series:
 $1^{\text{st}} \rightarrow 2, 4, 6, ? \rightarrow$ even nos.
 $2^{\text{nd}} \rightarrow 15, 12, 7, ?$
in the 2nd series, the pattern is:-
-3, -5, -7,
So, the missing terms are $\rightarrow 8, (7-7)$, i.e., 8, 0
6. (a); It is a combination of two series.
It is a combination of two series.
First $\begin{array}{cccc} 20, & 19, & 17, & 14, \\ -1 & -2 & -3 & \end{array}$?
So, $? = 14 - 4 = 10$
 $\begin{array}{cccc} 20, & 16, & 13, & 11, \\ -4 & -3 & -2 & \end{array}$?
So, $? = 11 - 1 = 10$
7. (d); It is a combination of two series:
(i) $\begin{array}{ccccc} 0, & 3, & 8, & 15, & 24, \\ +3 & +5 & +7 & +9 & \end{array}$?
 $? = 24 + 11 = 35$
(ii) 2, 5, 10, 17, 26
8. (c); Tens and units digits form two different series of consecutive odd numbers.
13, 35, 57, 79, 911
So, next term = 1113.
9. (c); Combination of the two series:
(i) $\begin{array}{ccccc} 625, & 125, & 25, & 5, \\ \div 5 & \div 5 & \div 5 & \end{array}$?
(ii) $\begin{array}{ccccc} 5, & 25, & ? \\ \times 5 & \times 5 & \end{array}$
So, the missing term is 125
10. (b); Combination of two series:
(i) $\begin{array}{ccccc} 3, & 7, & 13, & 21, & 31, \\ +4 & +6 & +8 & +10 & \end{array}$
So, $? = 31 + 12 = 43$
(ii) $\begin{array}{ccccc} 4, & 7, & 13, & 22, & 34 \\ +3 & +6 & +9 & +12 & \end{array}$
11. (a); The pattern is:
 $-1, \times 10 + 1, -1, \times 10 + 1, -1, \times 10 - 1$
So, missing term = $10 \times 10 + 1 = 101$
12. (c); 13, 32, 24, 43, 35, ?, 46, 65, 57, 76
Combination of two series:
(i) $\begin{array}{ccccc} 13, & 24, & 35, & 46, & 57 \\ +11 & +11 & +11 & +11 & \end{array}$

NUMBER SERIES

32,	43,	?,	65,	76
(ii) +11	+11	+11	+11	+11

So, missing term = $43 + 11 = 54$

13. (b); It is a combination of 3 series:

- (i) 2, 4, 6, 8, ?
- (ii) 1, 4, 7, 10
- (iii) 2, 5, 8, 11
- (iv) Consists of consecutive even numbers.

So, next term is 10

14. (c); Increment in numerator is increasing by 1, every time.

Increment in denominator is increasing by 2 every time

Fraction	Numerator	Denominator
↓	↓	↓
$\frac{4}{7}$	$2 + 2 = 4$	$3 + 4 = 7$
$\frac{7}{13}$	$4 + 3 = 7$	$7 + 6 = 13$

$$\frac{11}{21} \quad 7 + 4 = 11$$

$$13 + 8 = 21$$

So, missing term is $\frac{7}{13}$

15. (c); The pattern is:

$$-(36 \times 1), -(36 \times 2), -(36 \times 3)$$

So, $420 - 36 \times 6 = 204$

16. (c); The next number is :

Previous number $\times 0.3$

So, Missing number = $48.6 \times 0.3 = 14.58$

17. (c); $+2^2, +4^2, +6^2, \dots$

Next term $\rightarrow 300 + 36 = 336$

18. (c); $\times 1 + 1^2, \times 2 + 2^2, \times 3 + 3^2, \times 4 + 4^2$

Missing term = $51 \times 4 + 4^2 = 204 + 16 = 220$

19. (a); $\times 6 - 1, \times 5 - 1, \times 4 - 1, \times 3 - 1$

Missing term = $935 \times 3 - 1 = 2805 - 1 = 2804$

20. (c); $+3, +6, +12, +24, +48$; Next is: $51 + 48 = 99$

21. (d); $\times 1 + 1, \times 2 + 2, \times 3 + 3, \times 4 + 4, \dots$

Missing term is $\rightarrow 18 \times 3 + 3 = 54 + 3 = 57$

22. (e); Add prime numbers starting from 7 to each term to obtain the next term.

$$11 + 7 = 18, 18 + 11 = 29, 29 + 13 = 42, 42 + 17 = 59,$$

$$59 + 19 = 78 \text{ not } 80$$

So, the wrong term is 80

23. (b); $(2 + 7) \times 1 = 9$

$$(9 + 6) \times 2 = 30 \neq 32$$

$$(30 + 5) \times 3 = 105$$

So, the wrong number is 32.

QUANTITATIVE APTITUDE

24. (e); $\times 11, \times 9, \times 7, \times 5, \times 3, \times 1, \dots$

$$17325 \times 3 = 51975 \neq 34650$$

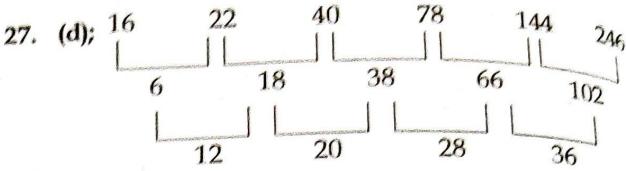
25. (a); Each term should be multiplied by 3 to obtain the next term.

So, wrong number is 10.

26. (c); $+4, +12, +20, +28, +36, +44, \dots$

So, wrong number is 46.

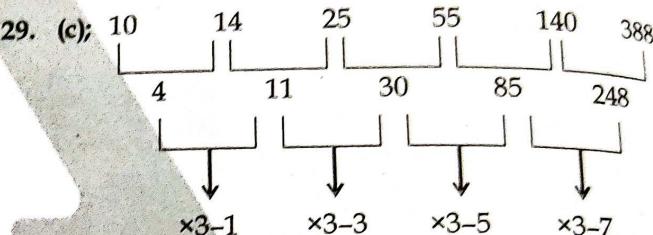
it should be 44.



So, the next term is 246.

28. (c); $2 + 4 = 6, 6 + 8 = 14, 14 + 16 = 30, 30 + 32 = 62, 62 + 64 = 126$

So, missing number = 62.



30. (d); $11 = 2 \times 3 + 5$

$$38 = 11 \times 4 - 6$$

$$197 = 38 \times 5 + 7$$

$$1172 \neq 197 \times 6 - 8$$

So, 1172 is wrong.

31. (a); $107 - 71 = 36 = 6^2$

$$71 - 46 = 25 = 5^2$$

$$46 - 30 = 16 = 4^2$$

$$30 - 21 = 9 = 3^2$$

$$21 - 19 = 2 \neq 2^2$$

So, 19 should be replaced by 17, so that

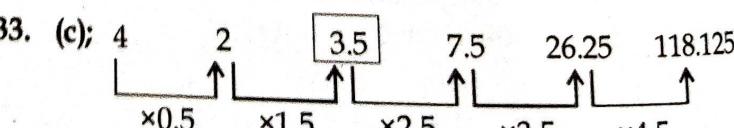
$$21 - 17 = 4 = 2^2$$

32. (d); $16 = 9 + 7$

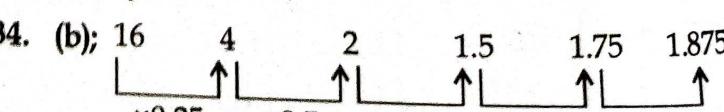
$$25 = 16 + 9$$

$$41 = 25 + 16$$

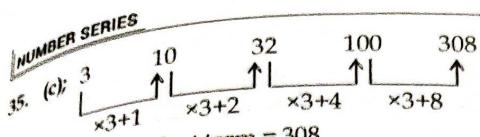
$$68 \neq 41 + 25$$



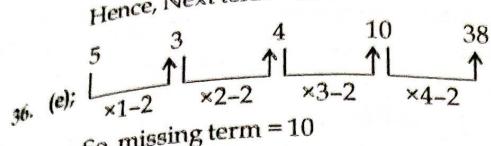
So, 3.5 is the wrong number it should be replaced by 3



So, 1.75 is the wrong number.



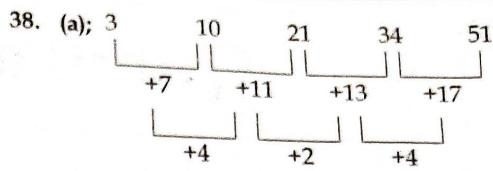
Hence, Next term = 308



So, missing term = 10

37. (b); $5 \times 1 + 1^2 = 6$
 $6 \times 2 + 2^2 = 16$
 $16 \times 3 + 3^2 = 57$
 $57 \times 4 + 4^2 = 244$

Hence, missing number = 16



So, 34 is the missing number

39. (d); $5 \times 2 + 1 = 11$

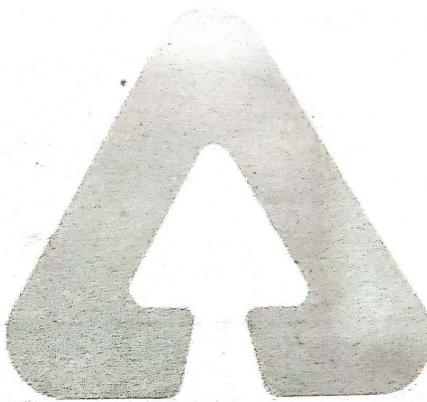
$11 \times 2 + 3 = 25$

$25 \times 2 + 5 = 55$

$55 \times 2 + 7 = 117$

40. (a); Series is: +2, +3, -4, -5, +6, +7, -8, -9, +10

So, next number = $4 + 10 = 14$



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