

Aptitude Mathematics

multiplication

1. Multiplication of two digit values.

$$95 \times 96 = ?$$

$$\text{Step 1: } 100 - 95 = -5 \Rightarrow a, 100 - 96 = -4 \Rightarrow b$$

$$\text{Step 2: } 95 - b \Rightarrow 91 \text{ OR } 96 - a \Rightarrow 91$$

$$\text{Step 3: } 91 \underline{a \times b} = 9120 \text{ ans}$$

2. Multiplication of three digits.

$$102 \times 106 = ?$$

$$\text{Step 1: } 102 - 100 = +2 \Rightarrow a, 106 - 100 = +6 \Rightarrow b$$

$$\text{Step 2: } 102 + b \Rightarrow 108 \text{ OR } 106 + a \Rightarrow 108$$

$$\text{Step 3: } 108 \underline{a \times b} = 10812 \text{ ans}$$

3. Multiplication of no of 9's digits value to any value.

$$999 \times 234 = ?$$

$$\text{Step 1: } 234 - 1 \Rightarrow 233$$

$$\text{Step 2 : } 233 \underline{999 - 233}$$

$$\text{Step 3 : } 233766 \text{ ans}$$

4. Multiplication of 98 with another value.

$$98 \times 52 = ?$$

$$\text{Step 1: } 52 \times 2 \Rightarrow 104$$

$$\text{Step 2: } 5200 - 104 \Rightarrow 5096$$

$$\text{Step 3: } 5096 \text{ ans}$$

5. Multiplication of 97 with another value.

$$97 \times 12 = ?$$

$$\text{Step 1: } 12 \times 3 \Rightarrow 36$$

$$\text{Step 2: } 1200 - 36 \Rightarrow 1164$$

$$\text{Step 3: } 1164 \text{ ans}$$

Divide without divide

6. Divide by 5

$$237/5 = ?$$

$$\text{Step 1: } 237 \times 2 = 474$$

$$\text{Step 2: } 47.4 \text{ ans}$$

7. Divide by 25

$$432/25 = ?$$

$$\text{Step 1: } 432 \times 4 = 1728$$

$$\text{Step 2: } 17.28 \text{ ans}$$

8. Divide by 125

$$750/125 = ?$$

$$\text{Step 1: } 750 \times 8 = 6000$$

$$\text{Step 2: } 6 \text{ ans}$$

Square

9. Square of value which have 5 at end

$$85^2 = ?$$

$$\text{Step 1: } 5^2 = \underline{\quad}25$$

$$\text{Step 2: } 8 \times 9 = 72\underline{\quad}$$

$$\text{Step 3: } 7225 \text{ ans}$$

$$75^2 = ?$$

$$\text{Step 1: } 5^2 = \underline{\quad}25$$

$$\text{Step 2: } 7 \times 8 = 56\underline{\quad}$$

$$\text{Step 3: } 5625 \text{ ans}$$

10. Square of < 100 value

$$98^2 = ?$$

$$\text{Step 1: } 100 - 98 = 2$$

$$\text{Step 2: } 2^2 = \underline{\quad}04$$

$$\text{Step 3: } 98 - 2 = 96\underline{\quad}$$

$$\text{Step 4: } 9604 \text{ ans}$$

$$96^2 = ?$$

$$\text{Step 1: } 100 - 96 = 4$$

$$\text{Step 2: } 4^2 = \underline{\quad}16$$

$$\text{Step 3: } 96 - 4 = 92\underline{\quad}$$

Step 4: 9216 ans

11. Square of > 100 value

$$102^2 = ?$$

Step 1: $102 - 100 = 2$

Step 2: $2^2 = __04$

Step 3: $102 + 2 = 104__$

Step 4: 10404 ans

$$103^2 = ?$$

Step 1: $103 - 100 = 3$

Step 2: $3^2 = __09$

Step 3: $103 + 3 = 106__$

Step 4: 10609 ans

Average

12. First 'n' odd number's average is equals to 'n'.

$$1, 3, 5, 7, 9 = ?$$

5 is ans

13. First 'n' even number's average is equals to 'n+1'.

$$2, 4, 6, 8 = ?$$

5 is ans

14. First 'n' natural numbers average is equals to “(n+1)/2”.

1,2,3,4,5 = ?

3 is ans

15. If first five consecutive numbers average is equals to 63. Find first and last value

$$[x+(x+1)+(x+2)+(x+3)+(x+4)+(x+5)]/5 = 63$$

Step 1: 61 62 **63** 64 64

Step 2: first value is 61, last value is 65

16. If first five consecutive odd numbers average is equals to 113.find 2nd small value.

Step 1: 109 111 **113** 115 117

Step 2: 111 is 2nd small value

17. If first six consecutive even numbers average is 207. Find first and last value.

Step 1: 202 204 206 207 208 210 212

Step 2: 202 first value and 212 is last value

Square root

1	9 = 10
2	8 = 10
3	7 = 10
4	6 = 10
5	5 = 10

1	1
2	4
3	9
4	16
5	25
6	36
7	49
8	64
9	81

18. $\sqrt{576} = ?$

Step 1: 76 // 6 comes at the end of square root of 4, 6

Step 2: 5 // 5 comes between 2's and 3's square root's value

Step 3: 2__

Step 4: $2 \times 3 = 6$ // 5 is lesser than 6

Step 5: therefore 24 is ans.

19. $\sqrt{5184} = ?$

Step 1: 84 // 4 comes at the end of square root of 2, 8

Step 2: 51 // 51 is comes between the 7's and 8's square root's value

Step 3: 7__

Step 4: $7 \times 8 = 56$ // 51 is lesser than 56

step 5: therefore 72 is ans ..

20. $\sqrt{10609}$

Step 1: 09 // 3, 7

Step 2: 106 // 10, 11

Step 3: 10__

Step 4: $10 \times 11 = 110$ // $106 < 110$

Step 5: 103 ans

Cube root

21. Cuberoot using trick

1	1
4	4
5	5
6	6
9	9
3	7
2	8

1	1
2	8
3	27
4	64
5	125
6	216
7	343
8	512
9	729
10	1000

Example

1. $3\sqrt{12,167}$
2. Step 1: 167 = 3 //from first table
3. Step 2: 12 = 2 //from 2nd table
4. Step 3: 23 is ans

22. Preposition of place

At – for specific places, exact location (india gate, canteen)

In – sitting in covered place (country, state, city)