CBSE NCERT Solutions for Class 8 mathematics Chapter 7

Exercise

Q.1. Find the cube root of each of the following numbers by prime factorisation method.
64
4

Solution: Given number is 64.

64 can be factorised as follows.

2	64
2	32
2	16
2	8
2	4
2	2
	1

Prime factorisation of 64=2×2×2×2×2×2

So, Cube root of 64
643=2×2×2×2×2×23=433=4.

Q.2. Find the cube root of the following number by prime factorization method.
512
8

Solution: Given number is 512.

512 can be factorized as follows.

2	512
2	256
2	128
2	64
2	32
2	16
2	8
2	4
2	2
	1

Prime factorization of 512=2×2×2×2×2×2×2×2×2. So, cube root of 512 is,5123=2×2×2×2×2×2×2×2×23=2×2×2=8. Therefore, cube root of 512 is 8.

Q.3. Find the cube root of 10648.

22

Solution: The given number is 10648.

10648 can be factorised as follow:

2	10648
2	5324
2	2662
11	1331
11	121
11	11
	1

Prime factorisation of 10648=2×2×2×11×11×11.
So, 106483=2×2×2×11×11×131=2×11=22 Hence, 106483=22

Q.4. Find the cube root of each of the following number by prime factorization method.
27000
30

Solution: Given number is 27000,

27000 can be factorized as follows,

2	27000
2	13500
2	6750
3	3375
3	1125
3	375
5	125
5	25
5	5
	1

Prime factorization of 27000=2×2×2×3×3×3×5×5×5. So, cube root of given number is,270003=2×2×2×3×3×3×5×5×53=2×3×5=30.

Q.5. Find the cube root of each of the following numbers by prime factorisation method.
175616
56

Solution: Given number is 175616,

Now 175616 can be factorised as follows

2	175616
2	87808
2	43904
2	21952
2	10976
2	5488
2	2744
2	1372
2	686
7	343
7	49
7	7
	1

Prime factorisation of 175616=2×2×2×2×2×2×2×2×2×7×7×7
So, cube roots of given number is, 1756163=2×2×2×2×2×2×2×2×2×7×7×73= 2×2×2×7=56.

Q.6. Find the cube root of the following number by prime factorization method.
15625
25

Solution: Given number 15625

15625 can be factorized as follows,

5	15625
5	3125
5	625
5	125
5	25
5	5
	1

Prime factorization of 15625=5×5×5×5×5×5. So, cube root of 15625 is,156253=5×5×5×5×5×53=5×5=25.

Q.7. Find the cube root of the following number by prime factorization method.
13824
24

Solution: Given number is 13824,

Now, 13824 can be factorized as follows

2	13824
2	6912
2	3456
2	1728
2	864
2	432
2	216
2	108
2	54
3	27
3	9
3	3
	1

Prime factorization of 13824=2×2×2×2×2×2×2×2×2×3×3×3 So, cube root of given number is,138243=2×2×2×2×2×2×2×2×2×3×3×33=2×2×2×3=24.

Q.8. Find the cube root of the following number by prime factorization method.
110592

48

Solution: Given number is 110592,

Now, 110592 can be factorised as follows

2	110592
2	55296
2	27648
2	13824
2	6912
2	3456
2	1728
2	864
2	432
2	216
2	108
2	54
3	27
3	9
3	3
	1

Prime factorization of 110592=2×2×2×2×2×2×2×2×2×2×2×2×3×3×3
So, cube root of given number is, 1105923=2×2×2×2×2×2×2×2×2×2×2×2×3×3×33= 2×2×2×2×3=48.

Q.9. Find the cube root of the following number by prime factorization method.
46656

36

Solution: Given number is 46656,

Now 46656 can be factorized as follows

2	46656
2	23328
2	11664
2	5832
2	2916
2	1458
3	729
3	243
3	81
3	27
3	9
3	3
	1

Prime factorization of 46656=2×2×2×2×2×2×3×3×3×3×3×3. So, cube root of given number is466563=2×2×2×2×2×2×3×3×33= 2×2×3×3=36.

Q.10. Find the cube root of each of the following number by prime factorisation method.
91125
45

Solution: Given number is 91125

Now 91125 can be factorised as follows

3	91125
3	30375
3	10125
3	3375
3	1125
3	375
5	125
5	25
5	5
	1

Prime factorisation of 91125=3×3×3×3×3×3×5×5×5
So, cube root of given number is,911253=3×3×3×3×3×3×5×5×53= 3×3×5=45.

Q.11. Cube of any odd number is even.
TrueFalse

Solution: Odd multiplied by odd is always odd.

Multiplication of three odds will be also odd.

Therefore, the product will be again an odd number. For example, the cube of 3 is 27, which is again an odd number. Hence, the given statement is false

Q.12. A perfect cube does not end with two zeros.
True

Solution: Given statement is:

A perfect cube does not end with two zeros.

Explanation:
Perfect cube will end with a certain number of zeroes that are always a perfect multiple of 3. For example, the cube of 10 is 1000 and there are 3 zeros at the end of it. Hence, the given statement is true.

False

Q.13. If square of a number ends with 5, then its cube ends with 25.
TrueFalse

Solution: Given statement is,

If square of a number ends with 5, then its cube ends with 25.

Explanation:
It is not always necessary that if the square of a number ends with 5, then its cube will end with 25.
For example, the square of 35 is 1225 and also has its unit place digit as 5 but the cube of 35 is 42875 which does not end with 25.

Q.14. There is no perfect cube which ends with 8.
TrueFalse

Solution: Given statement is,

There is no perfect cube which ends with 8.
Explanation:
The cubes of all the numbers having their unit place digit as 2 will ends with 8. In this way, There are many perfect cubes which ends with 8.

The cube of 12 is 1728 and cube of 22 is 10648. Hence, the given statement is false.

Q.15. The cube of a two-digit number may be a three-digit number.
TrueFalse

Solution: Given statement is, the cube of a two-digit number may be a three-digit number.

Explanation:
The smallest two digit natural number is 10 and its cube is 1000 which is a four-digit number.
Hence, the given statement is false.

Q.16. The cube of a two-digit number may have seven or more digits.
TrueFalse

Solution: Given statements is,

The cube of a two-digit number may have seven or more digits.
Explanation:
The largest two digit natural is 99 and its cube is 970299 which is a 6 digit number. Therefore, the cube of any two-digit number cannot have 7 or more digits in it.

Hence, the given statement is false.

Q.17. The cube of a single digit number may be a single digit number.
True

Solution: Given statement is,

The cube of a single digit number may be a single digit number.

Explanation:
The cube of 1 and 2 are 1 and 8 respectively.
Hence, the given statement "The cube of a single digit number may be a single digit number" is true.

False

Q.18. You are told that 1,331 is a perfect cube. Can you guess without factorisation what is its cube root? Similarly, guess the cube roots of 4913, 12167, 32768.

Solution: Given number is 1331 ,

We have to find its cube root by estimation method.
We know that,

Cube of 10 is, 103=1000 and, Possible cube of 11=1331
Since, cube of unit digit is =1
Therefore, cube root of 1331 is 11. Now we have to guess the cube roots of given numbers by estimation method,
First given number is, 4913
We know that 73=343
Next number comes with 7 as unit place digit is 17.
So possible cube of 17=4913.
Therefore, cube root of 4913 is 17.

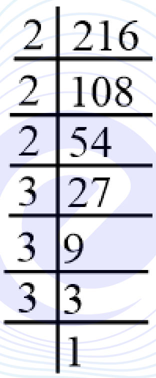
Second given number is, 12167
We know that 33=27
Here, in cube, unit digit is 7
Now, next number with 3 as its unit digit is 13.

Also, 133=2197
and next number with 3 as its unit digit is 23 and 233=12167
Hence, cube root of 12167 is 23.

And, the last given number is, 32768
We know that 23=8
Here in cube, unit's digit is 8
Now next number with 2 at its unit place digit is 12 and 123=1728
And next number with 2 as its unit's place digit is 22
223=10648
And next number with 2 at its unit's place digit is 32
Also, 323=32768
Hence, cube root of 32768 is 32.

Q.19. Find out whether the following number is a perfect cube or not.
216

Solution: Given number is 216
216 can be factorised as follows.



216=2×2×2×3×3×3=23×33
=2×33=63
In above factorisation, all numbers are triplet pairs.

Therefore, 216 is a perfect cube.

Q.20. Find out whether the following number is a perfect cube or not.
128

Solution: Given number is 128
128 can be factorised as follows

2	128
2	64
2	32
2	16
2	8
2	4
2	2
	1

$128=2\times2\times2\times2\times2\times2\times2=23\times23\times2.$

In the above factorisation 2 remains after the grouping the 2's in triplets.
Therefore, 128 is not a perfect cube.

Q.21. Find out whether the following number is a perfect cube or not.
1000

Solution: Given number is 1000.
1000 can be factorised as follows

2	1000
2	500
2	250
5	125
5	25
5	5
	1

$1000=2\times2\times2\times5\times5\times5=23\times53$
In the above factorisation, all prime factors are in triplet pairs.
Therefore, 1000 is a perfect cube.

Q.22. Find out whether the following number is a perfect cube or not.
100

Solution: Given number is 100.
100 can be factorised as follows

2	100
2	50
5	25
5	5
	1

$100=2\times2\times5\times5$
In the above factorisation 2×5 are not in triplets.
Therefore, 100 is not a perfect cube.

Q.23. Find out whether the following number is a perfect cube or not.
46656

Solution: Given number is 46656.
46656 can be factorised as follows,

2	46656
2	23328
2	11664
2	5832
2	2916
2	1458
3	729
3	243
3	81
3	27
3	9
3	3
	1

46656=2×2×2×2×2×2×3×3×3×3×3×3
= 23×23×33×33
In above prime factorization, all prime factors are in grouping of triplet pairs.
Therefore, 46656 is a perfect cube.

Q.24. Find the smallest number by which each of the following number must be multiplied to obtain a perfect cube.
243

Solution: Given number is 243
243 can be factorised as follows

3	243
3	81
3	27
3	9
3	3
	1

243=3×3×3×3×3
Here, two 3 's are not in triplet.

To make 243 a cube, one more 3 should be multiplied to it.
In this case, 243×3=929 is a perfect cube.
Hence, the smallest number by which 243 should be multiplied to obtain a perfect cube is 3.

Q.25. Find the smallest number by which each of the following number must be multiplied to obtain a perfect cube.
256

Solution: Given number is 256
256 can be factorised as follows

2	256
2	128
2	64
2	32
2	16
2	8
2	4
2	2
	1

So, $256=(2\times2\times2)\times(2\times2\times2)\times(2\times2)=23\times23\times22$

In this prime factorization we find that there is no triplet of 2.

To make 256 a cube, multiply it by 2.
$256\times2=2\times2\times2\times2\times2\times2\times2\times2\times2$ Thus, to make the given number 256 a perfect cube, we have to multiply it by 2.

Q.26. Find the smallest number by which the following number must be multiplied to obtain a perfect cube.
72

Solution: Given number is 72.
72 can be factorised as follows,

2	72
2	36
2	18
3	9
3	3
	1

So, $72=2\times2\times2\times3\times3=23\times32$
In this prime factorization we find that there is no triplet of 3.

To make 72 a perfect cube , multiply it by 3,

$72\times3=2\times2\times2\times3\times3\times3$ Thus, to make the given number 72 a perfect cube, we have to multiply it by smallest number 3.

Q.27. Find the smallest number by which the following number must be multiplied to obtain a perfect cube.
675

Solution: Given number is 675.
675 can be factorised as follows

3	675
3	225
3	75
5	25
5	5
	1

So, $675=3\times3\times3\times5\times5=33\times52$
In this prime factorization we find that there is no triplet of 5.

To make 675 a perfect cube, multiply it by 5.

$675\times5=3\times3\times3\times5\times5\times5$ Thus, to make the given number 675 a perfect cube, we have to multiply it by 5.

Q.28. Find the smallest number by which the following number must be multiplied to obtain a perfect cube.
100

Solution: Given number is 100,
100 can be factorised as follows

2	100
2	50
5	25
5	5
	1

So, $100=2\times2\times5\times5=22\times52$
In this prime factorization we find that there are no triplets of 2 and 5.

To make 100 a perfect cube, multiply it by 2 and 5,

$100\times2\times5=2\times2\times2\times5\times5\times5$ Thus, to make the given number 100 a perfect cube, we have to multiply it by 2 and 5.

Q.29. Find the smallest number by which the following number must be divided to obtain a perfect cube.
81

Solution: Here, 81 can be factorised as follows
$81=3\times3\times3\times3$
Here, one 3 is left which is not in triplet.
If we divided 81 by 3, then it will become a perfect cube.
Thus, $81\div3=27=3\times3\times3$ is a perfect cube
Hence, the smallest number by which 81 should be divided to make it a perfect cube is 3.

Q.30. Find the smallest number by which each of the following number must be divided to obtain a perfect cube.
128

Solution: Here, 128 can be factorised as follows
$128=(2\times2\times2)\times(2\times2\times2)\times2$
Here, one 2 is left which is not in triplet.
If we divided 128 by 2, then it will become a perfect cube.
Thus, $128\div2=64=2\times2\times2\times2\times2\times2$ is a perfect cube.
Here, the smallest number by which 128 must be divided to make it a perfect cube is 2.

Q.31. Find the smallest number by which 135 must be divided to obtain a perfect cube.
5

Solution: Given number is 135.

Prime factorisation of 135 is as follows:

3135345315551 So, $135=3\times3\times3\times5$ For a number to be a perfect cube, the prime factors should be in a group of three. In this prime factorization, we can see that the prime number 5 is not appearing in groups of three. Hence, 135 is not a perfect cube. If we divide 135 by 5 $135\div5=27$ and $27=3\times3\times3$ The prime factorization contains one group of three prime factors. Hence, 27 is a perfect cube. $\therefore$ The smallest number by which 135 should be divided to make it a perfect cube is 5.

Q.32. Find the smallest number by which the following number must be divided to obtain a perfect cube.
192
3

Solution: Given number is 192.

Prime factorisation of 192 as follows,

2	192
2	96
2	48
2	24
2	12
2	6
3	3
	1

So, $192=2\times2\times2\times2\times2\times2\times3$ In this prime factorisation we find that, the prime number 3 does not appear in group three times multiplication. So, if we divide 192 by 3, then prime number factorisation of the quotient will not contain 3. Which results, $192\div3=64$ Here, 64 is a perfect cube number. Thus, the smallest number by which 192 should be divided to make it a perfect cube is 3.

Q.33. Find the smallest number by which 704 must be divided to obtain a perfect cube.
11

Solution: The given number is 704.

Prime factorisation of 704 is as follows,

2	704
2	352
2	176
2	88
2	44
2	22
11	11
	1

So, $704=2\times2\times2\times2\times2\times2\times11$ In prime factorisation we find that, the prime number 11 does not appear in groups of three. So, if we divide 704 by 11, then the prime factorisation of the quotient will not contain 11. Which results in, $704\div11=64$ Here, 64 is a perfect cube number. Thus, the smallest number by which 704 should be divided to make it a perfect cube is 11.

Q.34. Parikshit makes a cuboid of Plasticine of sides 5 cm, 2 cm, 5 cm. How many such cuboids will he need to form a cube?

Solution: Parikshit makes a cuboid Plasticine of sides 5 cm, 2 cm, 5 cm.

We know that,

We have to find the L.C.M of the sides of cuboids to get the side of cube. So, L.C.M of 5, 2, 5 is $5\times2=10$ L.C.M of dimension of given cuboid is 10 cm Then, the required cube should be of edge 10 cm. $\therefore$ Volume of required cube=(edge)3 = (10 cm)3 = 1000 cm3 Volume of the cuboid =$(5\times2\times5)$ cm3=50 cm3 Now, the volume of the new cube=$(10\times10\times10)$ cm3=1000 cm3 Therefore, number of cuboid = Volume of cubeVolume of cuboid = 1000 cm350 cm3 = 20 Volume of the cuboid of side 5cm,2cm,5cm = 5cm×2cm×5cm=50cm3
Hence, 20 cuboids of 5 cm, 2 cm, 5 cm are required to form a cube.

Think, discuss andn write

Q.1. For any integer m, $m2<m3$.
TrueFalse

Solution: Given, integer m.

Let us take some examples and then deduce the result.

Let us take $m=2$ Then, $m2=2\times2=4$ and $m3=2\times2\times2=8$. Clearly, $4<8$ i.e. $m2<m3$. When, $m=1$
Then, $m2=1\times1=1$ and $m3=1\times1\times1=1$. Thus, $m2=m3$ Thus, we can say that for any positive integer (natural number), $m>1$, $m2<m3$ is true. When $m=-2$ Then, $m2=-2\times-2=4$ and $m3=-2\times-2\times-2=-8$.
Clearly, $4>-8$ i.e. $m2>m3$. Thus, we can say that for any negative integer m, $m2<m3$ is false.

Try these

Q.1. Is the number 400 a perfect cube?

Solution: We have to check if the number 400 is a perfect cube or not.

We shall do prime factorization of the number 400.

2	400
2	200
2	100
2	50
5	25
5	5
	1

So, 400=2×2×2×2×5×5. We know that if prime factors of a number appear 3 times or multiple of 3 times in its prime factorization, the number is a perfect cube. Otherwise, it is not a perfect cube. Here, the prime factor 2 and 5 are appearing 4 and 2 times, respectively. Therefore, the number 400 is not a perfect cube.

Q.2. Is 3375 a perfect cube?

Solution: Given: 3375

We know that,

To check the given number is a perfect cube or not, we need to find the prime factors and group the triplets of the factors. If there is no factor left out then the given number is a perfect cube. First, finding the factors by using the prime factorisation method. 333755112552255453933 3375=3×3×3×5×5×5 So, the prime factors are grouped in triplets. Hence, the given number is a perfect cube.

Q.3. Is 8000 a perfect cube?

Solution: Given: 8000

To check the given number is a perfect cube or not, we need to find the prime factors and group the triplets of the factors. If there is no factor left out then the given number is a perfect cube.

First, finding the factors by using the prime factorisation method. 5800051600532026423221628242 8000=2×2×2×2×2×2×5×5×5 So, the prime factors are grouped in triplets. Hence, the given number is a perfect cube.

Q.4. Is 15625 a perfect cube?

Solution: Given: 15625

To check the given number is a perfect cube or not, we need to find the prime factors and group the triplets of the factors. If there is no factor left out then the given number is a perfect cube.

First, finding the factors by using the prime factorisation method. 515625531255625512552555 15625=5×5×5×5×5×5 Hence, the given number is a perfect cube.

Q.5. Is 9000 a perfect cube?

Solution: Given: 9000

To check the given number is a perfect cube or not, we need to find the prime factors by using the prime factorisation method and group the triplets of the factors. If there is no factor left out then the given number is a perfect cube.

390003300051000520054028242 9000=2×2×2×5×5×5×3×3 Here, there are only two 3's in the product. Hence, the given number is not a perfect cube.

Q.6. Is 6859 a perfect cube?

Solution: Given: 6859

To check the given number is a perfect cube or not, we need to find the prime factors and group the triplets of the factors. If there is no factor left out then the given number is a perfect cube.

First, finding the factors by using the prime factorisation method. 19685919312519 6859=19×19×19 So, the prime factors are grouped in triplets. Hence, the given number is a perfect cube.

Q.7. Is 2025 a perfect cube?

Solution: Given: 2025

To check the given number is a perfect cube or not, we need to find the prime factors by using the prime factorisation method and group the triplets of the factors. If there is no factor left out then the given number is a perfect cube.

520255405381327393 2025=3×3×3×3×5×5 Here, there are only two 5's and one extra 3 in the product. Hence, the given number is not a perfect cube.

Q.8. Is 10648 a perfect cube?

Solution: Given: 10648

To check the given number is a perfect cube or not, we need to find the prime factors and group the triplets of the factors. If there is no factor left out then the given number is a perfect cube.

First, finding the factors by using the prime factorisation method. 21064825324226621113311112111 10648=2×2×2×11×11×11 So, the prime factors are grouped in triplets. Hence, the given number is a perfect cube.

Q.9. Observe the pattern;

13=1=123=8=3+533=27=7+9+1143=64=13+15+17+1953=125=21+23+25+27+29

Express 63 as the sum of odd numbers using above pattern.

Solution: The given pattern is shown as below;

13=1=123=8=3+533=27=7+9+1143=64=13+15+17+1953=125=21+23+25+27+29

We have to express 63 as the sum of odd numbers using above pattern. By observing the above pattern, we get, n=6 and n-1=6-1=5 Therefore, we start with 6×5+1=31 Thus, we have, 31+33+35+37+39+41=216. Hence, 63=216=31+33+35+37+39+41

Q.10. Observe the pattern;

13=1=123=8=3+533=27=7+9+1143=64=13+15+17+1953=125=21+23+25+27+29

Express 83 as the sum of odd numbers using above pattern.

Solution: The given pattern is shown as below;

13=1=123=8=3+533=27=7+9+1143=64=13+15+17+1953=125=21+23+25+27+29

We have to express 83 as the sum of odd numbers using above pattern. By observing the above pattern, we get, n=8 and n-1=8-1=7 Therefore, we start with 8×7+1=57 Thus, we have, 57+59+61+63+65+67+69+71=512. Hence, 83=512=57+59+61+63+65+67+69+71.

Q.11. Observe the pattern;

13=1=123=8=3+533=27=7+9+1143=64=13+15+17+1953=125=21+23+25+27+29

Express 73 as the sum of odd numbers using above pattern.

Solution: The given pattern is shown as below;

13=1=123=8=3+533=27=7+9+1143=64=13+15+17+1953=125=21+23+25+27+29

We have to express 73 as the sum of odd numbers using above pattern. By observing the above pattern, we get, n=7 and n-1=7-1=6 Therefore, we start with 7×6+1=43 Thus, we have, 43+45+47+49+51+53+55=343. Hence, 73=343=43+45+47+49+51+53+55.

Q.12. Find the one's digit of the cube of the following number;

3331

1

Solution: Given, 3331

We have to find the last digit of the cube of the given number.

We know that, cube of a number a, is given by the exponent of 3, while the base is a. Now, in number 3331. Here, the last digit of 3331 is 1. And, the cube of 1 is 13=1. So, the one's digit of the cube of 3331 will be 1

Q.13. Consider the following pattern.

23-13=1+2×1×3

33-23=1+3×2×3 43-33=1+4×3×3 Using the above pattern, find the value of 73-63.

Solution: Let us observe the following pattern:

23-13=1+2×1×3

33-23=1+3×2×3 43-33=1+4×3×3 From the pattern, it appears that the relation a3-b3=1+a×b×3 holds true for the pattern, a=b+1. Using the above relationship in the pattern, we shall use a=7 and b=6 for the expression 73-63 and write, 73-63=1+7×6×3=1+126=127. Therefore, the required answer is 127.

Q.14. Consider the following pattern.

23-13=1+2×1×3

33-23=1+3×2×3 43-33=1+4×3×3 Using the above pattern, find the value of 123-113.

Solution: Let us observe the following pattern:

23-13=1+2×1×3

33-23=1+3×2×3 43-33=1+4×3×3 From the pattern, it appears that the relation a3-b3=1+a×b×3 holds true for the pattern, a=b+1. Using the above relationship in the pattern, we shall use a=12 and b=11 for the expression 123-113 and write, 123-113=1+12×11×3=1+396=397. Therefore, the required answer is 397.

Q.15. Find the one's digit of the cube of the following number;

8888

2

Solution: Given, 8888

We have to find the last digit of the cube of the given number.

We know that, cube of a number a, is given by the exponent of 3, while the base is a. Now, in number 8888. Here, the last digit of 8888 is 8. And, the cube of 8 is 83=512. So, the one's digit of the cube of 8888 will be 2

Q.16. Consider the following pattern.

23-13=1+2×1×3

33-23=1+3×2×3 43-33=1+4×3×3 Using the above pattern, find the value of 203-193.

Solution: Let us observe the following pattern:

23-13=1+2×1×3

33-23=1+3×2×3 43-33=1+4×3×3 From the pattern, it appears that the relation a3-b3=1+a×b×3 holds true for the pattern, a=b+1. Using the above relationship in the pattern, we shall use a=20 and b=19 for the expression 203-193 and write, 203-193=1+20×19×3=1+1140=1141. Therefore, the required answer is 1141.

Q.17. Find the one's digit of the cube of the following number;

149

9

Solution: Given, 149

We have to find the last digit of the cube of the given number.

We know that, cube of a number a, is given by the exponent of 3, while the base is a. Now, in number 149. Here, the last digit of 149 is 9. And, the cube of 9 is 93=729. So, the one's digit of the cube of 149 will be 9

Q.18. Consider the following pattern.

23-13=1+2×1×3

33-23=1+3×2×3 43-33=1+4×3×3 Using the above pattern, find the value of 513-503.

Solution: Let us observe the following pattern:

23-13=1+2×1×3

33-23=1+3×2×3 43-33=1+4×3×3 From the pattern, it appears that the relation a3-b3=1+a×b×3 holds true for the pattern, a=b+1. Using the above relationship in the pattern, we shall use a=51 and b=50 for the expression 513-503 and write, 513-503=1+51×50×3=1+7650=7651. Therefore, the required answer is 7651.

Q.19. Find the one's digit of the cube of the following number;

1005

5

Solution: Given, 1005

We have to find the last digit of the cube of the given number.

We know that, cube of a number a, is given by the exponent of 3, while the base is a. Now, in number 1005. Here, the last digit of 1005 is 5. And, the cube of 5 is 53=125. So, the one's digit of the cube of 1005 will be 5.

Q.20. Find the one's digit of the cube of the following number;

1024

4

Solution: Given, 1024

We have to find the last digit of the cube of the given number.

We know that, cube of a number a, is given by the exponent of 3, while the base is a. Now, in number 1024. Here, the last digit of 1024 is 4. And, the cube of 4 is 43=64. So, the one's digit of the cube of 1024 will be 4.

Q.21. Find the one's digit of the cube of the following number;

77

3

Solution: Given, 77

We have to find the last digit of the cube of the given number.

We know that, cube of a number a, is given by the exponent of 3, while the base is a. Now, in number 77. Here, the last digit of 77 is 7. And, the cube of 7 is 73=343. So, the one's digit of the cube of 77 will be 3.

Q.22. Find the one's digit of the cube of the following number;

5022

8

Solution: Given, 5022

We have to find the last digit of the cube of the given number.

We know that, cube of a number a, is given by the exponent of 3, while the base is a. Now, in number 5022. Here, the last digit of 5022 is 2. And, the cube of 2 is 23=8. So, the one's digit of the cube of 5022 will be 8.

Q.23. Find the one's digit of the cube of the following number;

53

7

Solution: Given, 53

We have to find the last digit of the cube of the given number.

We know that, cube of a number a, is given by the exponent of 3, while the base is a. Now, in number 53. Here, the last digit of 53 is 3. And, the cube of 3 is 33=27. So, the one's digit of the cube of 53 will be 7.