How

Cube and cube roots

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① Find the one's digit of the cube of following numbers :

(i) 3331 = unit digit will be 1
(ii) 8888 = unit digit will be 6
(iii) 149 = " " " " 9
(iv) 1005 = " " " " 5
(v) 1024 = " " " " 4
(vi) 77 = " " " " 3
(vii) 5022 = " " " " 8
(viii) 53 = " " " " 7

② Express the following nos as the sum of odd nos using the pattern.

(a) 6^3 = 1 + 3 + 5 + 7 + 9 + 11
(b) 8^3 = 1 + 3 + 5 + 7 + 9 + 11 + 13 + 15
(c) 7^3 = 1 + 3 + 5 + 7 + 9 + 11 + 13

③ Which of the following are perfect cubes ?

a) 400

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

= 2×2×2×2×5×5
= As 2 and 5 cannot be grpd as cubes, ∴, it is not a perfect cube.

b) 3375

3 | 3375
3 | 1125
3 | 375
5 | 125
5 | 25
5 | 5
1

= 3×3×3×5×5×5
= As these can be grpd into 3, so its a perfect cube.

c) 8000

2 | 8000
2 | 4000
2 | 2000
2 | 1000
2 | 500
2 | 250
5 | 125
5 | 25
5 | 5
1

= 2×2×2×2×2×2×5×5×5
= As these nos can be grpd so its a perfect cube.

d)

(4) Is 392 a perfect cube? If not, find the smallest natural number by which 392 must be multiplied so that the product is a perfect cube?

Sol:

$$2 \mid 392$$
$$2 \mid 196$$
$$2 \mid 98$$
$$7 \mid 49$$
$$7 \mid 7$$
$$1$$

$= \overline{2 \times 2 \times 2} \times 7 \times 7$

= more 7 should be multiplied to obtain a perfect cube..