

7

Find the least number by which 1323 must be multiplied so that the product must be a perfect cube.

$$\begin{array}{r|l} 3 & 1323 \\ \hline 3 & 441 \\ \hline 3 & 147 \\ \hline 7 & 49 \\ \hline & 7 \end{array}$$

So, $3 \times 3 \times 3 \times 7 \times 7 = (3)^3 \times (7)^2$

∴ Thus, 7 is not in triplet, so 7 must be multiplied to 1323 to make it a perfect cube number.

8

Find the smallest number by which ~~8768~~ 8768 must be divided so that the quotient is a perfect cube.

$$\begin{array}{r|l} 2 & 8768 \\ \hline 2 & 4384 \\ \hline 2 & 2192 \\ \hline 2 & 1096 \\ \hline 2 & 548 \\ \hline 2 & 274 \\ \hline 137 & 137 \\ \hline 1 & 1 \end{array}$$

So, $(2 \times 2 \times 2) \times (2 \times 2 \times 2) \times 137 = (2)^3 \times (2)^3 \times 137$

∴ Thus, 137 is not in a triplet. So, 137 must be divided to make 8768 a perfect cube number.

9 Find the smallest number by which 27783 be multiplied to get a perfect cube number.

3	27783
3	9261
3	3087
3	1029
7	343
7	49
	7

So, $3 \times 3 \times 3 \times 3 \times 7 \times 7 \times 7 = (3)^3 \times 7^3 \times 3$

∴ Thus, 3 is not in triplet, so, 3×3 must be multiplied from 27783 to make it a perfect cube number.

10 with what least number must 8640 be divided so that the quotient is a perfect cube?

2	8640
2	4320
2	2160
2	1080
2	540
2	270
3	135
3	45
3	15
5	5
	1

So, $(2 \times 2 \times 2) \times (2 \times 2 \times 2) \times (3 \times 3 \times 3) \times 5 = (2)^3 \times (2)^3 \times (3)^3 \times 5$

∴ Thus, 5 is not in a triplet, so, 5 must be divided to make 8640 a perfect cube number.

(ii) which is the smallest number that must be multiplied to 77175 to make it a perfect cube?

→ 5	77175
5	15435
3	3087
3	1029
7	343
7	49
7	7
	1

$$\text{So, } 5 \times 5 \times 3 \times 3 \times (7 \times 7 \times 7) \\ = (5)^2 \times (3)^2 \times (7)^3$$

So, 5 & 3 are not in triplet.
 \therefore Thus, 5×3 must be multiplied to 77175 to make it a perfect square.