

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

Solution :

Prime factorization of 1323 = $(3 \times 3 \times 3) \times 7 \times 7$

$$\begin{array}{r} 3 \overline{) 1323} \\ \underline{9} \\ 441 \\ \underline{3} \\ 147 \\ \underline{7} \\ 21 \\ \underline{3} \\ 3 \\ \underline{3} \\ 0 \end{array}$$

$\therefore 7$ must be multiplied so that the product is a perfect cube.

8. Find the smallest number by which ~~8768~~ ⁸⁷⁶⁸ be multiplied so that the quotient is a perfect cube?

Solution,

Prime factors of 8768 = $\sqrt{(2 \times 2 \times 2) \times (2 \times 2 \times 2) \times 137}$

$\therefore 137$ must be divided so that the resulting quotient is a perfect cube

$$\begin{array}{r} 2 \overline{) 8768} \\ \underline{24384} \\ 2 \overline{) 192} \\ \underline{1096} \\ 2 \overline{) 96} \\ \underline{548} \\ 2 \overline{) 48} \\ \underline{2744} \\ 2 \overline{) 137} \\ \underline{137} \\ 0 \end{array}$$

Ans: 137 (Ans)

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

Solution,

Prime factors of 27783 = $\sqrt{(3 \times 3 \times 3) \times 3 \times (7 \times 7 \times 7)}$

$\therefore 27783$ must be multiplied by $3 \times 3 = 9$ (Ans)

$$\begin{array}{r} 3 \overline{) 27783} \\ \underline{9261} \\ 3 \overline{) 3087} \\ \underline{2029} \\ 7 \overline{) 343} \\ \underline{749} \\ 7 \overline{) 7} \\ \underline{7} \\ 0 \end{array}$$

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

Solution,

Prime factors of 8640 = $\sqrt{(2 \times 2 \times 2) \times (2 \times 2 \times 2) \times (3 \times 3 \times 3) \times 5}$

$\therefore 8640$ must be divided by 5. (Ans)

11. Which ~~of~~ is the smallest number that must be multiplied to 77175 to make it a perfect cube?

Solution,

Prime factors of 77175 = $(7 \times 7 \times 7) \times 3 \times 3 \times 5 \times 5$

\therefore 77175 must ^{be} multiplied by 3×5
= 15 (Ans).