

Ex - 4(A)

(i) $7^3 = 7^3 = 343$

(v) $31 = 31^3 = 29791$

(ii) $77 = 77^3 = 1331$

(vi) $42 = 42^3 = 74088$

(iii) $16 = 16^3 = 4096$

(vii) $54 = 54^3 = 157464$

(iv) $23 = 23^3 = 12167$

2 Find which of the following are perfect cubes?

(i) $243 = 243$

$$\begin{array}{r} 3 \overline{) 243} \\ \underline{9 } \\ 81 \\ \underline{9 } \\ 0 \end{array}$$

$= 243 = 3 \times 9 \times 9$

= triplet of number 3 is not formed.

(ii) $588 =$

$$\begin{array}{r} 2 \overline{) 588} \\ \underline{2 } \\ 147 \\ \underline{3 } \\ 49 \\ \underline{7 } \\ 0 \end{array}$$

$= (2 \times 2) \times (7 \times 7) \times 3$

= triplet of number 3 is not formed

(iii) $1331 = 11 \times 11 \times 11$

$$\begin{array}{r} 11 \overline{) 1331} \\ \underline{11 } \\ 231 \\ \underline{11 } \\ 121 \\ \underline{11 } \\ 11 \\ \underline{11 } \\ 0 \end{array}$$

$= 11 \times 11 \times 11$

$= 11^3$

(iv) $24000 =$

$$\begin{array}{r}
 2 \mid 24000 \\
 \hline
 2 \mid 12000 \\
 \hline
 2 \mid 6000 \\
 \hline
 3 \mid 3000 \\
 \hline
 2 \mid 1000 \\
 \hline
 2 \mid 500 \\
 \hline
 2 \mid 250 \\
 \hline
 5 \mid 25 \\
 \hline
 5 \mid 5 \\
 \hline
 5
 \end{array}$$

$= (2 \times 2 \times 2) (2 \times 2 \times 2) (5 \times 5 \times 5) \times 3$

$=$ triplet of number 3 is not formed

(v) $1728 = 12^3$

$= 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3$
 $= 12^3$

~~$= 2 \times 2 \times 3$ triplet of 102 is not formed~~

$$\begin{array}{r}
 2 \mid 1728 \\
 \hline
 2 \mid 864 \\
 \hline
 2 \mid 432 \\
 \hline
 2 \mid 216 \\
 \hline
 3 \mid 18 \\
 \hline
 3 \mid 6 \\
 \hline
 3
 \end{array}$$

3- Find the cube of :

(i) $2.1 = 2.1^3 = 9.261$

(v) $0.12 = 0.12^3 = 0.001728$

(ii) $0.4 = 0.4^3 = 0.064$

(vi) $0.02 = 0.02^3 = 0.000008$

(iii) $1.6 = 1.6^3 = 4.096$

(vii) $0.8 = 0.512$

(iv) $2.5 = 2.5^3 = 15.625$

(4) $\frac{3}{7} = \left(\frac{3}{7}\right)^3 = \frac{3 \times 3 \times 3}{7 \times 7 \times 7} = \frac{27}{343}$

$$(ii) \frac{8}{9} = \frac{8 \times 8 \times 8}{9 \times 9 \times 9} = \frac{512}{729}$$

$$(iii) \frac{10}{13} = \left(\frac{10}{13}\right)^3 = \frac{1000}{2197}$$

$$(iv) \frac{12}{7} = \left(\frac{8}{7}\right)^3 = \frac{512}{343}$$

$$(v) \frac{21}{2} = \left(\frac{5}{2}\right)^3 = \frac{125}{8}$$

$$5 - (i) -3 = -27 \quad (v) +25 = -15625$$

$$(ii) -7 = -343 \quad (vi) -30 = -27000$$

$$(iii) -12 = -1728 \quad (vii) -50 = -125000$$

$$(iv) -18 = -5832$$

6- (i) 216, 729, 3375, 8000, 125, 343, 4096, 9261.

(i) an even number = 216, 8000, 4096

(ii) an odd number = 729, 3375, 125, 343, 9261

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

Ans-

$$\begin{array}{r|l}
 3 & 1323 \\
 \hline
 3 & 441 \\
 \hline
 3 & 147 \\
 \hline
 7 & 21 \\
 \hline
 & 3
 \end{array}$$

∴ $1323 \Rightarrow 3 \times 3 \times 3 \times 7 \times 7$

∴ 1323 must be multiplied with ~~the~~ number 7 to get a perfect square.

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

Ans-

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

⇒ 8768 must be ~~be~~ divide with 137 to get a perfect cube.

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

$$\begin{array}{r}
 \text{Ans} \quad 3 \overline{) 27783} \\
 \underline{9} \\
 9 \\
 \underline{3081} \\
 3081 \\
 \underline{1029} \\
 1029 \\
 \underline{343}
 \end{array}$$

$$= (3 \times 3) \times (3 \times 3)$$

$$= 9 \times 9$$

$$= 9$$

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

$$\begin{array}{r}
 \text{Ans} \quad 2 \overline{) 8640} \\
 \underline{2} \\
 2 \\
 \underline{2160} \\
 2160 \\
 \underline{1080} \\
 1080 \\
 \underline{540} \\
 540 \\
 \underline{270} \\
 270 \\
 \underline{135} \\
 135 \\
 \underline{27} \\
 27 \\
 \underline{9} \\
 9 \\
 \underline{3}
 \end{array}$$

$$8640 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 5$$

$$= 5$$

11- which is the smallest number that must be multiplied to 77175 to make it a perfect cube?

~~57775~~
~~5555~~
2311

Ans-15