

Exercise 4(A)

1. i) 343 ii) 1331 iii) 4096 iv) 12167 v) 29791 vi) 74088
vii) ~~157464~~

2. The perfect cubes are:- (iii) 1331 (v) 1728 ~~(vii)~~

3. i) 9.261 ii) 0.064 iii) 4.096 iv) 15.625 ~~(v)~~
v) 0.001728 vi) 0.000008 vii) 0.512

4. i) $\frac{27}{343}$ ii) $\frac{512}{729}$ (iii) $\frac{1000}{2197}$ (iv) $\frac{729}{343}$ (v) $\frac{125}{8}$

5. i) -27 ii) -343 iii) -1728 iv) -5832 v) -15625

$$vi) - 27000 \quad vii) - 125000$$

$$6. \quad i) 216, 8000, 4096, \quad ii) 729, 3375, 125, 343, 9261$$

$$7 \begin{array}{r} 3 \overline{) 1323} \\ 3 \overline{) 441} \\ 3 \overline{) 147} \\ 7 \overline{) 49} \\ 7 \overline{) 7} \\ \times \end{array} = 3^3 \times 7^2$$

So, the least number by which 1323 should be multiplied to is 7 to get a perfect cube $(3 \times 7 = 21)^3$.

$$8 \begin{array}{r} 2 \overline{) 8768} \\ 2 \overline{) 4384} \\ 2 \overline{) 2192} \\ 2 \overline{) 1096} \\ 2 \overline{) 548} \\ 2 \overline{) 274} \\ 137 \end{array} = 2^6 \times 137$$

So, 137 should be divided from 8768 to get a perfect cube (4^3) .

$$9 \begin{array}{r} 3 \overline{) 27783} \\ 3 \overline{) 9261} \\ 3 \overline{) 3087} \\ 3 \overline{) 1029} \\ 7 \overline{) 343} \\ 7 \overline{) 49} \\ 7 \overline{) 7} \\ \times \end{array} = 3^4 \times 7^3$$

So, 9 is multiplied to 27783 to get a perfect cube (63^3) .

$$10 \begin{array}{r} 2 \overline{) 8640} \\ 2 \overline{) 4320} \\ 2 \overline{) 2160} \\ 2 \overline{) 1080} \\ 2 \overline{) 540} \\ 2 \overline{) 270} \\ 135 \end{array} \quad \begin{array}{r} 3 \overline{) 135} \\ 3 \overline{) 45} \\ 3 \overline{) 15} \\ 5 \overline{) 5} \\ \times \end{array} = 2^6 \times 3^3 \times 5$$

So, 5 should be divided from 8640 to get a perfect cube (12^3) .

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$$3 \overline{) 77175} = 3^2 \times 5^2 \times 7^3$$

3 25725 So, 15 is the smallest number

5 8575 by which 77175 should be

3 1715 multiplied to get a perfect

7 343 cube $(105)^3$.

7 49

7 7

x

Exercise AB

1. i) 4 ii) 7 iii) 9 iv) 12 v) 21 vi) 4096 vii) 20 viii) 15

2. i) $\frac{3}{4}$ ii) $\frac{5}{6}$ iii) $\frac{7}{8}$ iv) 36 v) 12 (vi) 180 (vii) 120

3. i) -6 ii) -8 iii) -11 iv) $-\frac{3}{5}$ v) $-\frac{4}{7}$ vi) $-\frac{8}{7}$ vii) -13 viii) -18
ix) -140

4. i) 104 ii) 201 iii) -0.8 iv) -2.5 v) -50

5. $2 \overline{) 26244} = 2^2 \times 3^8$

2 $\overline{) 13122}$

3 $\overline{) 6561}$

3 $\overline{) 2187}$

3 $\overline{) 729}$

3 $\overline{) 243}$

3 $\overline{) 81}$

3 $\overline{) 27}$

3 $\overline{) 9}$

3 $\overline{) 3}$

So, 36 should be divided so that it becomes a perfect cube.

(6.) $3 \overline{) 30375} = 3^5 \times 5^3$

$3 \overline{) 10125}$

$3 \overline{) 3375}$

$3 \overline{) 1125}$

$3 \overline{) 375}$

$3 \overline{) 125}$

$5 \overline{) 25}$

$5 \overline{) 5}$

x

So, 3 should be multiplied to 30375, to get a perfect cube $(45)^3$.

7. $\sqrt[3]{700 \times 2 \times 49 \times 5} = \sqrt[3]{100 \times 10 \times 49 \times 7} = 10 \times 7 = 70$

ii) $-6 \times 12 = -72$ (iii) $-4 \times -5 = 20$ (iv) $\frac{-3}{7}$ (v) $\frac{-9}{11}$

(vi) $6 \div 3$ (vii) -56