

iii) -5832

⇒ Cube root of -5832 = $\sqrt[3]{-5832} = -18$

iv) -2744000

⇒ Cube root of -2744000 = $\sqrt[3]{-2744000} = -140$

4i) 2.744

⇒ $\sqrt[3]{2.744} = \frac{\sqrt[3]{2744}}{\sqrt[3]{1000}} = \frac{14}{10} = 1.4$

ii) 9.261

⇒ $\sqrt[3]{9.261} = \frac{\sqrt[3]{9261}}{\sqrt[3]{1000}} = \frac{21}{10} = 2.1$

iii) 0.000027

⇒ $\sqrt[3]{0.000027} = \frac{\sqrt[3]{27}}{\sqrt[3]{1000000}} = \frac{3}{100} = 0.03$

iv) -0.512

⇒ $\sqrt[3]{-0.512} = \frac{\sqrt[3]{-512}}{\sqrt[3]{1000}} = \frac{-8}{10} = -0.8$

v) -15.625

⇒ $\sqrt[3]{-15.625} = \frac{\sqrt[3]{-15625}}{\sqrt[3]{1000}} = \frac{-25}{10} = -2.5$

2) i) $\frac{27}{64}$

$$\Rightarrow \sqrt[3]{\frac{27}{64}} = \frac{\sqrt[3]{27}}{\sqrt[3]{64}} = \frac{\sqrt[3]{3 \times 3 \times 3}}{\sqrt[3]{4 \times 4 \times 4}} = \frac{3}{4}$$

ii) $\frac{125}{216}$

$$\Rightarrow \sqrt[3]{\frac{125}{216}} = \frac{\sqrt[3]{125}}{\sqrt[3]{216}} = \frac{\sqrt[3]{5 \times 5 \times 5}}{\sqrt[3]{6 \times 6 \times 6}} = \frac{5}{6}$$

iii) $\frac{343}{512}$

$$\Rightarrow \sqrt[3]{\frac{343}{512}} = \frac{\sqrt[3]{343}}{\sqrt[3]{512}} = \frac{\sqrt[3]{7 \times 7 \times 7}}{\sqrt[3]{8 \times 8 \times 8}} = \frac{7}{8}$$

iv) 64×729

$$\Rightarrow \sqrt[3]{64 \times 729} = \sqrt[3]{64} \times \sqrt[3]{729} = 4 \times 9 = 36$$

v) 64×27

$$\Rightarrow \sqrt[3]{64 \times 27} = \sqrt[3]{64} \times \sqrt[3]{27} = 4 \times 3 = 12$$

vi) 729×8000

$$\Rightarrow \sqrt[3]{729 \times 8000} = \sqrt[3]{729} \times \sqrt[3]{8000} = 9 \times 20 = 180$$

vii) 3375×512

$$\Rightarrow \sqrt[3]{3375 \times 512} = \sqrt[3]{3375} \times \sqrt[3]{512} = 15 \times 8 = 120$$

3)i) -216

\Rightarrow Cube root of $-216 = \sqrt[3]{-216} = -6$

ii) -512

\Rightarrow Cube root of $-512 = \sqrt[3]{-512} = -8$

iii) -1331

\Rightarrow Cube root of $-1331 = \sqrt[3]{-1331} = -11$

iv) $-\frac{27}{125}$

\Rightarrow Cube root of $-\frac{27}{125} = \sqrt[3]{-\frac{27}{125}} = -\frac{3}{5}$

v) $-\frac{64}{343}$

\Rightarrow Cube root of $-\frac{64}{343} = \sqrt[3]{-\frac{64}{343}} = -\frac{4}{7}$

vi) $-\frac{512}{343}$

\Rightarrow Cube root of $-\frac{512}{343} = \sqrt[3]{-\frac{512}{343}} = -\frac{8}{7}$

vii) -2197

\Rightarrow Cube root of $-2197 = \sqrt[3]{-2197} = -13$

viii) -5832

$$\Rightarrow \text{Cube root of } -5832 = \sqrt[3]{-5832} = -12$$

ix) -2744000

$$\Rightarrow \text{Cube root of } -2744000 = \sqrt[3]{-2744000} = -140$$

x) 2.744

$$\Rightarrow \sqrt[3]{2.744} = \frac{\sqrt[3]{2744}}{\sqrt[3]{1000}} = \frac{14}{10} = 1.4$$

xi) 9.261

$$\Rightarrow \sqrt[3]{9.261} = \frac{\sqrt[3]{9261}}{\sqrt[3]{1000}} = \frac{21}{10} = 2.1$$

xii) 0.000027

$$\Rightarrow \sqrt[3]{0.000027} = \frac{\sqrt[3]{27}}{\sqrt[3]{1000000}} = \frac{3}{100} = 0.03$$

xiii) -0.512

$$\Rightarrow \sqrt[3]{-0.512} = \frac{\sqrt[3]{-512}}{\sqrt[3]{1000}} = \frac{-8}{10} = -0.8$$

xiv) -15.625

$$\Rightarrow \sqrt[3]{-15.625} = \frac{\sqrt[3]{-15625}}{\sqrt[3]{1000}} = \frac{-25}{10} = -2.5$$

ii) -125×1000

$\Rightarrow \sqrt[3]{-125 \times 1000} = \sqrt[3]{-125} \times \sqrt[3]{1000} = -5 \times 10 = -50$

5) ~~26244~~ $26244 = 2 \times 2 \times 3 \times 3 \times 3 \times 3 \times 3 \times 2$

26244

$3 \times 3 \times 3$

2

13122

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

6561

$2 \times 2 \times 3 \times 3$

3

2187

Clearly, 26244 must be divided by 3

729

by $2 \times 2 \times 3 \times 3 = 36$

33

243

3

81

3

27

3

9

3

3

1

6) 30375

3

30375

3

10125

$30375 = 3 \times 3 \times 3 \times 3 \times 3 \times 5 \times 5 \times 5$

3

3375

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

3

1125

3

375

Clearly, 30375 must be multiplied by 3

5

125

by 3.

5

25

5

5

1

7) $700 \times 2 \times 49 \times 5$

$\Rightarrow 2 \times 2 \times 5 \times 5 \times 7 \times 2 \times 7 \times 7 \times 5$

$= (2 \times 2 \times 2) \times (5 \times 5 \times 5) \times (7 \times 7 \times 7)$

$= 2 \times 5 \times 7 = 70$

ii) -216×1728

$\Rightarrow -(2 \times 2 \times 2 \times 3 \times 3 \times 3) \times (2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 3)$

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

$= -72$

iii) $-64 \times (-125)$

$\Rightarrow -(4 \times 4 \times 4) \times [-(5) \times (5) \times (5)]$

$= -4 \times (-5)$

$= 20$

iv) $\frac{-27}{343}$

$\Rightarrow \frac{-3 \times 3 \times 3}{7 \times 7 \times 7} = \frac{-3}{7}$

v) $\frac{729}{-1331}$

$\Rightarrow \frac{9 \times 9 \times 9}{-(11 \times 11 \times 11)} = \frac{9}{-11}$

vi) 250.047

$\Rightarrow \frac{250047}{1000} = \frac{(3 \times 3 \times 3) \times (2 \times 3 \times 3) \times (7 \times 7 \times 7)}{(10 \times 10 \times 10)}$
 $= \frac{3 \times 3 \times 7}{10} = \frac{63}{10} = 6.3$

