



Cubes and Cubes Roots Ex 4.5 Q19

Answer :

The number 8.65 could be written as $\frac{865}{100}$.

Now

$$\sqrt[3]{8.65} = \sqrt[3]{\frac{865}{100}} = \frac{\sqrt[3]{865}}{\sqrt[3]{100}}$$

Also

$$860 < 865 < 870 \Rightarrow \sqrt[3]{860} < \sqrt[3]{865} < \sqrt[3]{870}$$

From the cube root table, we have:

$$\sqrt[3]{860} = 9.510 \text{ and } \sqrt[3]{870} = 9.546$$

For the difference (870–860), i.e., 10, the difference in values

$$= 9.546 - 9.510 = 0.036$$

\therefore For the difference of (865–860), i.e., 5, the difference in values

$$= \frac{0.036}{10} \times 5 = 0.018 \text{ (upto three decimal places)}$$

$$\therefore \sqrt[3]{865} = 9.510 + 0.018 = 9.528 \text{ (upto three decimal places)}$$

From the cube root table, we also have:

$$\sqrt[3]{100} = 4.642$$

$$\therefore \sqrt[3]{8.65} = \frac{\sqrt[3]{865}}{\sqrt[3]{100}} = \frac{9.528}{4.642} = 2.053 \text{ (upto three decimal places)}$$

Thus, the required cube root is 2.053.

Cubes and Cubes Roots Ex 4.5 Q20

Answer :

We have:

$$7500 < 7532 < 7600 \Rightarrow \sqrt[3]{7500} < \sqrt[3]{7532} < \sqrt[3]{7600}$$

From the cube root table, we have:

$$\sqrt[3]{7500} = 19.57 \quad \text{and} \quad \sqrt[3]{7600} = 19.66$$

For the difference (7600–7500), i.e., 100, the difference in values

$$= 19.66 - 19.57 = 0.09$$

∴ For the difference of (7532–7500), i.e., 32, the difference in values

$$= \frac{0.09}{100} \times 32 = 0.0288 = 0.029 \text{ (up to three decimal places)}$$

$$\therefore \sqrt[3]{7532} = 19.57 + 0.029 = 19.599$$

Cubes and Cubes Roots Ex 4.5 Q21

Answer :

We have:

$$830 < 833 < 840 \Rightarrow \sqrt[3]{830} < \sqrt[3]{833} < \sqrt[3]{840}$$

From the cube root table, we have:

$$\sqrt[3]{830} = 9.398 \quad \text{and} \quad \sqrt[3]{840} = 9.435$$

For the difference (840–830), i.e., 10, the difference in values

$$= 9.435 - 9.398 = 0.037$$

∴ For the difference (833–830), i.e., 3, the difference in values

$$= \frac{0.037}{10} \times 3 = 0.0111 = 0.011 \text{ (upto three decimal places)}$$

$$\therefore \sqrt[3]{833} = 9.398 + 0.011 = 9.409$$

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