



Cubes and Cubes Roots Ex 4.5 Q13

Answer :

We have:

$$7300 < 7342 < 7400 \Rightarrow \sqrt[3]{7000} < \sqrt[3]{7342} < \sqrt[3]{7400}$$

From the cube root table, we have:

$$\sqrt[3]{7300} = 19.39 \text{ and } \sqrt[3]{7400} = 19.48$$

For the difference $(7400 - 7300)$, i.e., 100, the difference in values

$$= 19.48 - 19.39 = 0.09$$

\therefore For the difference of $(7342 - 7300)$, i.e., 42, the difference in the values

$$= \frac{0.09}{100} \times 42 = 0.0378 = 0.037$$

$$\therefore \sqrt[3]{7342} = 19.39 + 0.037 = 19.427$$

Cubes and Cubes Roots Ex 4.5 Q14

Answer :

We have:

$$133100 = 1331 \times 100 \Rightarrow \sqrt[3]{133100} = \sqrt[3]{1331 \times 100} = 11 \times \sqrt[3]{100}$$

By cube root table, we have:

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

$$\therefore \sqrt[3]{133100} = 11 \times \sqrt[3]{100} = 11 \times 4.642 = 51.062$$

Cubes and Cubes Roots Ex 4.5 Q15

Answer :

We have:

$$37800 = 2^3 \times 3^3 \times 175 \Rightarrow \sqrt[3]{37800} = \sqrt[3]{2^3 \times 3^3 \times 175} = 6 \times \sqrt[3]{175}$$

Also

$$170 < 175 < 180 \Rightarrow \sqrt[3]{170} < \sqrt[3]{175} < \sqrt[3]{180}$$

From cube root table, we have:

$$\sqrt[3]{170} = 5.540 \text{ and } \sqrt[3]{180} = 5.646$$

For the difference (180–170), i.e., 10, the difference in values

$$= 5.646 - 5.540 = 0.106$$

\therefore For the difference of (175–170), i.e., 5, the difference in values

$$= \frac{0.106}{10} \times 5 = 0.053$$

$$\therefore \sqrt[3]{175} = 5.540 + 0.053 = 5.593$$

Now

$$37800 = 6 \times \sqrt[3]{175} = 6 \times 5.593 = 33.558$$

Thus, the required cube root is 33.558.

***** END *****