



Cubes and Cubes Roots Ex 4.2 Q5

Answer :

(i)

We have:

$$\frac{27}{64} = \frac{3 \times 3 \times 3}{8 \times 8 \times 8} = \frac{3^3}{8^3} = \left(\frac{3}{8}\right)^3$$

Therefore, $\frac{27}{64}$ is a cube of $\frac{3}{8}$.

(ii)

We have:

$$\frac{125}{128} = \frac{5 \times 5 \times 5}{2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2} = \frac{5^3}{2^3 \times 2^3 \times 2}$$

It is evident that 128 cannot be grouped into triples of equal factors; therefore, $\frac{125}{128}$ is not a cube of a rational number.

(iii)

We have:

$$0.001331 = \frac{1331}{1000000} = \frac{11 \times 11 \times 11}{2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 5 \times 5 \times 5 \times 5 \times 5} = \frac{11^3}{(2 \times 2 \times 5 \times 5)^3} = \frac{11^3}{100^3} = \left(\frac{11}{100}\right)^3$$

Therefore, 0.001331 is a cube of $\frac{11}{100}$.

(iv)

We have:

$$0.04 = \frac{4}{100} = \frac{2 \times 2}{2 \times 2 \times 5 \times 5}$$

It is evident that 4 and 100 could not be grouped in to triples of equal factors; therefore, 0.04 is not a cube of a rational number.

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