



Cubes and Cubes Roots Ex 4.4 Q4

Answer :

Property:

For any two integers a and b , $\sqrt[3]{ab} = \sqrt[3]{a} \times \sqrt[3]{b}$

(i) From the above property, we have:

$$\sqrt[3]{4^3 \times 6^3} = \sqrt[3]{4^3} \times \sqrt[3]{6^3} = 4 \times 6 = 24$$

(ii) Use above property and proceed as follows:

$$\sqrt[3]{8 \times 17 \times 17 \times 17} = \sqrt[3]{2^3 \times 17^3} = \sqrt[3]{2^3} \times \sqrt[3]{17^3} = 2 \times 17 = 34$$

(iii) From the above property, we have:

$$\begin{aligned} & \sqrt[3]{700 \times 2 \times 49 \times 5} \\ &= \sqrt[3]{2 \times 2 \times 5 \times 5 \times 7 \times 2 \times 7 \times 7 \times 5} \quad (\because 700 = 2 \times 2 \times 5 \times 5 \times 7 \text{ and } 49 = 7 \times 7) \\ &= \sqrt[3]{2^3 \times 5^3 \times 7^3} \\ &= \sqrt[3]{2^3} \times \sqrt[3]{5^3} \times \sqrt[3]{7^3} \\ &= 2 \times 5 \times 7 \\ &= 70 \end{aligned}$$

(iv)

From the above property, we have:

$$\begin{aligned} & 125\sqrt[3]{a^6} - \sqrt[3]{125a^6} \\ &= 125\sqrt[3]{a^6} - \left(\sqrt[3]{125} \times \sqrt[3]{a^6} \right) \\ &= 125 \times a^2 - (5 \times a^2) \\ & (\because \sqrt[3]{a^6} = \sqrt[3]{\{a \times a \times a\} \times \{a \times a \times a\}} = a \times a = a^2 \text{ and } \sqrt[3]{125} = \sqrt[3]{5 \times 5 \times 5} = 5) \\ &= 125a^2 - 5a^2 \\ &= 120a^2 \end{aligned}$$

***** END *****