

Mathematics

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(Chapter – 1) (Number Systems)(Exemplar Problems)

(Class – IX)

Exercise 1.4

Question 7:

Find the values of $\frac{4}{(216)^{-\frac{2}{3}}} + \frac{1}{(256)^{-\frac{3}{4}}} + \frac{2}{(243)^{-\frac{1}{5}}}$

Answer 7:

Given that: $\frac{4}{(216)^{-\frac{2}{3}}} + \frac{1}{(256)^{-\frac{3}{4}}} + \frac{2}{(243)^{-\frac{1}{5}}}$

$$= \frac{4}{(6^3)^{-\frac{2}{3}}} + \frac{1}{(4^4)^{-\frac{3}{4}}} + \frac{2}{(3^5)^{-\frac{1}{5}}}$$

$$= \frac{4}{6^{-3 \times \frac{2}{3}}} + \frac{1}{4^{-4 \times \frac{3}{4}}} + \frac{2}{3^{-5 \times \frac{1}{5}}}$$

$$= \frac{4}{6^{-2}} + \frac{1}{4^{-3}} + \frac{2}{3^{-1}}$$

$$= 4 \times 6^2 + 1 \times 4^3 + 2 \times 3$$

$$= 4 \times 36 + 1 \times 64 + 6$$

$$= 144 + 64 + 6$$

$$= 214$$

