

Mathematics

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(Chapter – 1) (Real Numbers)(Exemplar Problems)
(Class – X)

Exercise 1.2

Question 9:

Without actually performing the long division, find if $\frac{987}{10500}$ will have terminating or non-terminating (repeating) decimal expansion. Give reasons for your answer.

Answer 9:

Yes, it is terminating decimal expansion.

Simplified denominator has factor in the form of $2^m \cdot 5^n$. So, this is terminating decimal.

Now,

$$\begin{aligned}\frac{987}{10500} &= \frac{47}{500} = \frac{47}{5^3 \cdot 2^3} \times \frac{2}{2} \\ &= \frac{94}{5^3 \times 2^3} = \frac{94}{1000} = 0.094\end{aligned}$$

