

Mathematics

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

(Class – IX)

Exercise 1.3

Question 8:

Show that $0.142857142857... = \frac{1}{7}$.

Answer 8:

Let $x = 0.142857142857 ...$

$$\Rightarrow x = 0.\overline{142857} \dots\dots\dots (1)$$

Multiplying both sides by 1000000 to equation (1), we get

$$1000000 x = 142857.\overline{142857} \dots\dots\dots (2)$$

Subtracting equation (1) from equation (2), we get

$$1000000 x - x = 142857.\overline{142857} - 0.\overline{142857}$$

$$\Rightarrow 999999x = 142857$$

$$\Rightarrow x = \frac{142857}{999999} = \frac{1}{7}$$

