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(Affiliated to CBSE up to +2 Level)

Class: IX

Subject: Mathematics

Date: 21/04/2021

Question 1: Express each of the following decimals in the form p/q :

(i) $0.\bar{4}$

(ii) $0.\bar{37}$

(iii) $0.\bar{54}$

(iv) $0.\overline{621}$

(v) $125.\bar{3}$

(vi) $4.\bar{7}$

(vii) $0.\bar{47}$

ANSWER:

(i) Let $x = 0.\bar{4}$

$$\Rightarrow x = 0.44444\dots$$

$$10x = 4.444\dots$$

$$\Rightarrow 10x = 4 + x$$

$$\Rightarrow 9x = 4$$

$$\Rightarrow x = \frac{4}{9}$$

Hence, $0.\bar{4} = \frac{4}{9}$

(ii) Let $x = 0.\bar{37}$

$$\Rightarrow x = 0.373737\dots$$

$$\Rightarrow 100x = 37.3737\dots$$

$$\Rightarrow 100x = 37 + 0.3737\dots$$

$$\Rightarrow 100x = 37 + x$$

$$\Rightarrow 99x = 37$$

$$\Rightarrow x = \frac{37}{99}$$

Hence, $0.\bar{37} = \frac{37}{99}$