RD Sharma Solutions for Class-9

RD Sharma solutions for chapter 1

RD Sharma Solutions for Chapter 1 - Number System

Exercise-1.3

1. Solution:

$(i)\ 0.39 = \frac{39}{100}$

$(ii)\ 0.750 = \frac{750}{1000} = \frac{3}{4}$

$(iii)\ 2.15 = \frac{215}{100} = \frac{43}{20}$

$(iv)\ 7.010 = 7\frac{10}{1000} = 7\frac{1}{100} = \frac{701}{100}$

$(v)\ 9.90 = \frac{990}{100} = \frac{99}{10}$

$(vi)\ 1.0001 = \frac{10001}{10000}$

2. Solution:

Subtracting (*i*) from (*ii*)

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

$\therefore\ 0.\bar{4} = \frac{4}{9}$

(*ii*) $0.\overline{37}$

Let $x = 0.\overline{37} = 0.373737...$ ...(*i*)

$100x = 37.373737...$ ...(*ii*)

Subtracting (*i*) from (*ii*)

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

$\therefore\ 0.\overline{37} = \frac{37}{99}$

(*iii*) $0.\overline{54}$

Let $x = 0.\overline{54} = 0.545454...$ ...(*i*)

$100x = 54.545454...$ ...(*ii*)

Subtracting (*i*) from (*ii*)

$99x = 54 \Rightarrow x = \frac{54}{99}$

$\Rightarrow x = \frac{6}{11}$

$\therefore\ 0.\overline{54} = \frac{6}{11}$

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

Let $x = 0.\overline{621} = 0.621621621...$ ...(*i*)

$1000x = 621.621621621...$ ...(*ii*)

Subtracting (*i*) from (*ii*)

$$999x = 621 \Rightarrow x = \frac{621}{999}$$

$$\Rightarrow x = \frac{23}{37}$$

(Dividing the numerator and denominator by 27)

(*v*) $125.\overline{3}$

Let $x = 125.\overline{3} = 125.333...$ ...(*i*)

$10x = 1253.333...$ ...(*ii*)

Subtracting (*i*) from (*ii*)

$9x = 1253 - 125 = 1128$

$$x = \frac{1128}{9} = \frac{376}{3}$$

$$\therefore 125.\overline{3} = \frac{376}{3}$$

(*vi*) $4.\overline{7}$

Let $x = 4.\overline{7} = 4.777...$ ...(*i*)

$10x = 47.777...$ ...(*ii*)

Subtracting (*i*) from (*ii*)

$9x = 47 - 4 = 43$

$$\Rightarrow x = \frac{43}{9}$$

$$\therefore 4.\overline{7} = \frac{43}{9}$$

(*vii*) $0.4\overline{7}$

Let $x = 0.4\overline{7}$

$10x = 4.\overline{7} = 4.777...$ ...(*i*)

and $100x = 47.777...$ ...(*ii*)

Subtracting (*i*) from (*ii*)

$$90x = 43 \Rightarrow x = \frac{43}{90}$$

$$\therefore 0.4\overline{7} = \frac{43}{90}$$