

Mathematics

(www.tiwariacademy.net)

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

(Class – IX)

Exercise 1.4

Question 1:

Express $0.6 + 0.\bar{7} + 0.4\bar{7}$ in the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$.

Answer 1:

Let $x = 0.6$

$$\Rightarrow x = \frac{6}{10}$$

$$\text{or } x = \frac{3}{5}$$

Let $y = 0.\bar{7}$ (1)

Multiplying both sides by 10, we get

$$10y = 7.\bar{7}$$
 (2)

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

$$10y - y = 7.\bar{7} - 0.\bar{7}$$

$$\Rightarrow 9y = 7.0$$

$$\Rightarrow y = \frac{7}{9}$$

Let $z = 0.4\bar{7}$ (1)

Multiplying both sides by 10 to equation (1), we get

$$10z = 4.\bar{7}$$
 (2)

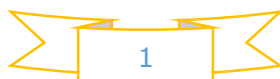
Multiplying both sides by 100 to equation (1), we get

$$100z = 47.\bar{7}$$
 (3)

Subtracting equation (2) from equation (3), we get

$$100z - 10z = 47.\bar{7} - 4.\bar{7}$$

$$\Rightarrow 90z = 43$$



Mathematics

(www.tiwariacademy.net)

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

(Class – IX)

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

Now $0.6 + 0.\bar{7} + 0.4\bar{7}$

$$= x + y + z$$

$$= \frac{3}{5} + \frac{7}{9} + \frac{43}{90}$$

$$= \frac{54 + 70 + 43}{90} = \frac{167}{90}$$

