Exercise -1.3

1.

(i) 0.39
(ii) 0.750
(iii) 2.15
(iv) 7.010
(v) 9.90
(vi) 1.0001

Sol:

Let $x = 0\cdot\overline{4}$

Now, $x = 0\cdot\overline{4} = 0.444....$ $.....(1)$

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

$10x = 4.444$ $.....(2)$

Subtracting equation (1) by (2)

$\therefore 10x - x = 4.444... - 0.444...$

$\Rightarrow 9x = 4$

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

Hence, $0\cdot\overline{4} = \frac{4}{9}$

Let $x = 0\cdot\overline{37}$

Now, $x = 0.3737...$ $.....(1)$

Multiplying equation (1) by l0.

$\therefore 10x = 3.737$ $....(2)$

$100x = 37.3737...$ $.....(3)$

Subtracting equation (1) by equation (3)

$\therefore 100x - x = 37$

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$\Rightarrow 99x = 37$

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

Hence, $0\cdot\overline{37} = \frac{37}{99}$

2.

Sol:

(i) We have,

$0\cdot 39 = \frac{39}{100}$

$\Rightarrow \boxed{0\cdot 39 = \frac{39}{100}}$

(ii) We have,

$0\cdot 750 = \frac{750}{1000} = \frac{750\div 250}{1000\div 250} = \frac{3}{4}$

(iii) We have

$2\cdot 15 = \frac{215}{100} = \frac{215\div 5}{100\div 5} = \frac{43}{20}$

$\therefore \boxed{2\cdot 15 = \frac{43}{20}}$

(iv) We have

$7\cdot 010 = \frac{7010}{1000} = \frac{7010\div 10}{1000\div 10} = \frac{701}{100}$

$\therefore \boxed{7010 = \frac{701}{100}}$

(v) We have,

$9\cdot 90 = \frac{990}{100} = \frac{990\div 10}{100\div 10} = \frac{99}{10}$

$\therefore \boxed{9\cdot 90 = \frac{99}{10}}$

(vi) We have,

$1\cdot 0001 = \frac{10001}{10000}$

$\therefore \boxed{1\cdot 0001 = \frac{10001}{10000}}$

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