**Q1. Express the following rational numbers as decimals:**

**(i)** $\frac{42}{100}$

**(ii)** $\frac{327}{500}$

**(iii)** $\frac{15}{4}$

**Solution:**

(i) By long division method

100) $\overline{42}$ ( 0.42

400

$\overline{200}$

200

$\overline{0}$

Therefore, $\frac{42}{100}$ = 0.42

(ii) By long division method

500) $\overline{327.000}$ ( 0.654

3000

$\overline{2700}$

2500

$\overline{2000}$

2000

$\overline{0}$

Therefore, $\frac{327}{500}$ = 0.654

(iii) By long division method

4) $\overline{15.00}$ ( 3.75

12

$\overline{30}$

28

$\overline{20}$

20

$\overline{0}$

Therefore, $\frac{15}{4}$ = 3.75

**Q2. Express the following rational numbers as decimals:**

**(i)** $\frac{2}{3}$

**(ii)** $-\frac{4}{9}$

**(iii)** $-\frac{2}{15}$

**(iv)** $-\frac{22}{13}$

**(v)** $\frac{437}{999}$

**Solution:**

(i) By long division method

3) $\overline{2.0000}$ ( 0.66

18

$\overline{20}$

18

$\overline{2}$

Therefore, $\frac{2}{3}$ = 0.66

(ii) By long division method

9) $\overline{4.000}$ ( 0.444

3600

$\overline{4000}$

3600

$\overline{4000}$

3600

$\overline{400}$

Therefore, $-\frac{4}{9}$ = – 0.444

(iii) By long division method

15) $\overline{2.00}$ ( 1.333

15

$\overline{50}$

45

$\overline{50}$

45

50

45

5

Therefore, $\frac{2}{15}$ = -1.333

(iv) By long division method

13) 22.000 ( 1.69230769

13

90

78

120

117

30

26

40

39

100

91

90

78

120

117

3

Therefore, – $\frac{22}{13}$ = – 1.69230769

(v) By long division method

999) 437.0000 ( 0.43743

3996

3740

2997

7430

6993

4370

3996

3740

2997

743

Therefore, $\frac{437}{999}$ = 0.43743

**Q3. Look at several examples of rational numbers in the form of $\frac{p}{q}$ (q ≠ 0), where p and q are integers with no common factor other than 1 and having terminating decimal representations. Can you guess what property q must satisfy?**

**Solution:**

A rational number $\frac{p}{q}$ is a terminating decimal only, when prime factors of q are q and 5 only. Therefore, $\frac{p}{q}$ is a terminating decimal only, when prime factorization of q must have only powers of 2 or 5 or both.