Number System Ex 1.2 Q2

Answer :

(i) Given rational number is $\frac{2}{3}$

Now we have to express this rational number into decimal form. So we will use long division method

$$
\begin{array}{r}
0.666 \\
3\overline{)20} \\
18 \\
\hline
20 \\
18 \\
\hline
20 \\
18 \\
\hline
2
\end{array}
$$

Therefore $\frac{2}{3} = 0.6666$

$\Rightarrow \frac{2}{3} = 0.\bar{6}$

Hence, $\boxed{\frac{2}{3} = 0.\bar{6}}$

(ii) Given rational number is $-\frac{4}{9}$

Now we have to express this rational number into decimal form. So we will use long division method

$$
\begin{array}{r}
0.444 \\
9\overline{)40} \\
36 \\
\hline
40 \\
36 \\
\hline
40 \\
36 \\
\hline
4
\end{array}
$$

Therefore, $\frac{4}{9} = 0.444$

$\Rightarrow -\frac{4}{9} = -0.\bar{4}$

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

(iii) Given rational number is $-\frac{2}{15}$

Now we have to express this rational number into decimal form. So we will use long division method

$$
\begin{array}{r|l}
15 & 0.1333 \\
\hline
 & 20 \\
 & 15 \\
\hline
 & 50 \\
 & 45 \\
\hline
 & 50 \\
 & 45 \\
\hline
 & 50 \\
 & 45 \\
\hline
 & 5
\end{array}
$$

Therefore $\frac{2}{15} = 0.1333$

$\Rightarrow \frac{2}{15} = 0.1\bar{3}$

Hence, $\boxed{-\frac{2}{15} - 0.1\bar{3}}$

(iv) Given rational number is $-\frac{22}{13}$

Now we have to express this rational number into decimal form. So we will use long division method

$$
\begin{array}{r|l}
13 & 1.692307 \\
\hline
 & 22 \\
 & 13 \\
\hline
 & 90 \\
 & 78 \\
\hline
 & 120 \\
 & 117 \\
\hline
 & 30 \\
 & 26 \\
\hline
 & 40 \\
 & 39 \\
\hline
 & 100 \\
 & 91 \\
\hline
 & 9
\end{array}
$$

Therefore $\frac{22}{13} = 1.692307...$

$\Rightarrow \frac{22}{13} = 1.\overline{692307}$

Hence, $\boxed{-\frac{22}{13} = -1.\overline{692307}}$

(v) Given rational number is $\frac{437}{999}$

Now we have to express this rational number into decimal form. So we will use long division method

$$
\begin{array}{r|l}
999 & .437 \\
\hline
 & 4370 \\
 & 3996 \\
\hline
 & 3740 \\
 & 2997 \\
\hline
 & 7430 \\
 & 6993 \\
\hline
 & 437
\end{array}
$$

$\Rightarrow \frac{437}{999} = 0.\overline{437}$

Hence, $\boxed{\frac{437}{999} = 0.\overline{437}}$

(vi) Given rational number is $\frac{33}{26}$

Now we have to express this rational number into decimal form. So we will use long division method

$$
\begin{array}{r}
1.2692307 \\
26\overline{)\ 33} \\
\underline{26} \\
70 \\
\underline{52} \\
180 \rightarrow \text{remainder} = 18 \\
\underline{156} \\
240 \\
\underline{234} \\
60 \\
\underline{52} \\
80 \\
\underline{78} \\
200 \\
\underline{182} \\
18 \rightarrow \text{remainder} = 18
\end{array}
$$

$$\text{Therefore } \frac{33}{26} = 1.2\overline{692307}...$$

$$\text{Hence, } \boxed{\frac{33}{26} = 1.2\overline{692307}}$$

Number System Ex 1.2 Q3

Answer :

Prime factorization is the process of finding which prime numbers you need to multiply together to get a certain number. So prime factorization of denominators (q) must have only the power of 2 or 5 or both.

********** END **********