7th Class (Maths)

Unit # 3

Ex # 3.1

Convert decimals into rational no's

Q#1. (Solutions)

i) 0.36

$= \frac{36}{100} = \frac{9}{25}$ ($\div$ by 4)

ii) 0.75

$= \frac{75}{100} = \frac{15}{20}$ ($\div$ by 5)

$= \frac{3}{4}$ ($\div$ by 5)

iii) -6.08

$= \frac{-608}{100} = -\frac{152}{25}$ ($\div$ by 4)

iv) -0.125

$= \frac{-125}{100} = -\frac{5}{4}$ ($\div$ by 25)

(ii) $\frac{2}{7} \approx 0.286$

$$
\begin{array}{r|l}
 & 0.286 \\
\hline
7 & 20 \\
 & 14 \\
\hline
 & 60 \\
 & 56 \\
\hline
 & 40 \\
 & 35 \\
\hline
 & 50 \\
 & 49 \\
\hline
 & 1
\end{array}
$$

(iii) $\frac{5}{11} \approx 0.455$

$$
\begin{array}{r|l}
 & 0.455 \\
\hline
11 & 50 \\
 & 44 \\
\hline
 & 60 \\
 & 55 \\
\hline
 & 50 \\
 & 44 \\
\hline
 & 60 \\
 & 55 \\
\hline
 & 5
\end{array}
$$

iv) $\frac{8}{13} \approx 0.615\ldots$

$$
\begin{array}{r|l}
 & 0.615 \\
\hline
13 & 80 \\
 & 78 \\
\hline
 & 20 \\
 & 13 \\
\hline
 & 70 \\
 & 65 \\
\hline
 & 5
\end{array}
$$

(v) $\frac{10}{6} \approx 1.666\ldots$

$$
\begin{array}{r|l}
 & 1.666 \\
\hline
6 & 10 \\
 & 6 \\
\hline
 & 40 \\
 & 36 \\
\hline
 & 40 \\
 & 36 \\
\hline
 & 4
\end{array}
$$

ii. $\frac{27}{20}$

$= 1.35$

(terminating)

$$\begin{array}{r|l} & 1.35 \\ \hline 20 & 27 \\ & 20 \\ \hline & 70 \\ & 60 \\ \hline & 100 \\ & 100 \\ \hline & \times \end{array}$$

iii) $\frac{3}{25}$

$= 0.12$

(terminating)

$$\begin{array}{r|l} & 0.12 \\ \hline 25 & 30 \\ & 25 \\ \hline & 50 \\ & 50 \\ \hline & \times \end{array}$$

iv) $\frac{31}{50}$

$= 0.62$

(terminating)

$$\begin{array}{r|l} & 0.62 \\ \hline 50 & 310 \\ & 300 \\ \hline & 100 \\ & 100 \\ \hline & \times \end{array}$$

v) $\frac{5}{1000}$

$= 0.005$

(terminating)

$$\begin{array}{r|l} & 0.005 \\ \hline 1000 & 5000 \\ & 5000 \\ \hline & \times \end{array}$$

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ix) $\frac{24}{32}$

$= 0.75$ (terminating)

$$
\begin{array}{r|l}
 & 0.75 \\
\hline
32 & 240 \\
 & 224 \\
\hline
 & 160 \\
 & 160 \\
\hline
 & x
\end{array}
$$

Q#3: Express in non-terminating decimals upto 3 decimal places

i) $\frac{4}{3}$

$= 1.333\ldots$

$$
\begin{array}{r|l}
 & 1.333 \\
\hline
3 & 4 \\
 & 3 \\
\hline
 & 10 \\
 & 9 \\
\hline
 & 10 \\
 & 9 \\
\hline
 & 10 \\
 & 9 \\
\hline
 & 1
\end{array}
$$

vi) $\frac{24}{22} \approx 1.0909\ldots$

$$
\begin{array}{r|l}
 & 1.0909\ldots \\
\hline
22 & 24 \\
 & 22 \\
\hline
 & 200 \\
 & 198 \\
\hline
 & 200 \\
 & 198 \\
\hline
 & 2
\end{array}
$$

vii) $\frac{7}{12} \approx 0.583\ldots$

$$
\begin{array}{r|l}
 & 0.583 \\
\hline
12 & 70 \\
 & 60 \\
\hline
 & 100 \\
 & 96 \\
\hline
 & 40 \\
 & 36 \\
\hline
 & 4
\end{array}
$$

Q.4: Round off upto three decimal places.

i) 5.41679
$= 5.417$

ii) 11.10365
$= 11.104$

iii) 0.92517
$= 0.925$

iv) 3.10351
$= 3.104$

v) 0.74206
$= 0.742$

vi) 23.15147
$= 23.151$

(END of Ex# 3.2)

v. $\frac{9}{6} = \frac{3}{2}$

It is a terminating decimal because its denominator has prime factor 2.

vi. $\frac{20}{15} = \frac{4}{3}$

It is non-terminating because its denominator is 3.

vii. $\frac{22}{7}$

It is non-terminating because its denominator is 7.

viii. $\frac{4}{9}$

It is non-terminating because its denominator is 9.

∴ ——— ∴

Q#2. Express in terminating decimals

i- $\frac{2}{100} = 0.02$ (terminating)

$$100 \overline{)200}\ 0.02$$
$$200$$
$$\underline{\quad}$$
$$x$$

vi) $\frac{20}{8}$

$= 2.5$ (terminating)

$$\begin{array}{r} 2.5 \\ 8\overline{)20} \\ 16 \\ \hline 40 \\ 40 \\ \hline \times \end{array}$$

vii) $\frac{21}{6}$

$= 3.5$ (terminating)

$$\begin{array}{r} 3.5 \\ 6\overline{)21} \\ 18 \\ \hline 30 \\ 30 \\ \hline \times \end{array}$$

viii) $\frac{84}{64}$

$= 1.3125$ (terminating)

$$\begin{array}{r} 1.3125 \\ 64\overline{)84} \\ 64 \\ \hline 200 \\ 192 \\ \hline 80 \\ 64 \\ \hline 160 \\ 128 \\ \hline 320 \\ 320 \\ \hline \times \end{array}$$

Exercise # 3.2 Pg:3

Q.1. Without actual division, seperate terminating and non-terminating decimals.

i. $\frac{13}{8}$

Sol: It is terminating decimal because its denominator has prime factors $2 \times 2 \times 2 = 8$

ii. $\frac{7}{25}$

Sol: It is terminating decimal because its denominator has prime factors $5 \times 5 = 25$

iii. $\frac{8}{3}$

Sol. It is non-terminating decimal because its denominator has no prime factor

iv. $\frac{5}{11}$

Sol. It is non-terminating because its denominator has no prime factor

v) 6.46

$= \frac{646}{100}$

$= \frac{323}{50}$ ($\div$ by 2)

vi) 15.25

$= \frac{1525}{100}$

$= \frac{305}{20}$ ($\div$ by 5)

$= \frac{61}{4}$ ($\div$ by 5)

vii) 8.125

$= \frac{8125}{1000}$

$= \frac{1625}{200}$ ($\div$ by 5)

$= \frac{325}{40}$ ($\div$ by 5)

$= \frac{65}{8}$ ($\div$ by 5)

viii) -0.268

$= -\frac{268}{1000} = -\frac{67}{250}$ ($\div$ by 4)