Maths VIII
Rational numbers

DATE
PAGE NO.

Do all sums in fair note book

(1) What is rational number?

Ans A number which can be written in the form of $\frac{p}{q}$ where p and q are integers and $q \neq 0$ is called a rational no.
For example → $\frac{3}{4}$, $\frac{1}{3}$, $\frac{1}{10}$ etc

(2) Write five negative rational numbers.

Ans $-\frac{3}{4}$, $-\frac{8}{7}$, $-\frac{6}{10}$, $\frac{7}{-8}$, $-\frac{10}{19}$ etc

(3) Compare $-\frac{8}{9}$ and $-\frac{4}{5}$

Sol Taking LCM of 9 and 5 $\Rightarrow 9 \times 5 = 45$

$\therefore \frac{-8 \times 5}{9 \times 5} = -\frac{40}{45}$ and $\frac{-4 \times 9}{5 \times 9} = -\frac{36}{45}$

Since $-40 < -36 \therefore -\frac{40}{45} < -\frac{36}{45}$ or $-\frac{8}{9} < -\frac{4}{5}$

(4) Find the absolute value of $-\frac{15}{17}$

Sol → $\left|-\frac{15}{17}\right| = \frac{15}{17}$

5 Find the absolute value of $-\frac{1}{3} \times \frac{7}{-3}$

Sol $\left|-\frac{1}{3} \times \frac{7}{-3}\right| = \left|-\frac{1}{3} \times -\frac{7}{3}\right| = \left|\frac{7}{9}\right| = \frac{7}{9}$

(6) Write the additive inverse of (i) $-\frac{7}{19}$ (ii) $\frac{21}{12}$

Sol (i) Additive inverse of $-\frac{7}{19} = \frac{7}{19} \because -\frac{7}{19} + \frac{7}{19} = \frac{-7+7}{19} = \frac{0}{19} = 0$

(ii) Additive inverse of $\frac{21}{12}$ is $-\frac{21}{12} \because \frac{21}{12} + \frac{-21}{12} = \frac{21-21}{12} = \frac{0}{12} = 0$

(7) Find the multiplicative inverse (reciprocal) of $\frac{1}{5}$,

Sol multiplicative inverse or reciprocal of $\frac{1}{5} = \frac{5}{1}$ Ans

(8) multiplicative inverse or reciprocal of $-\frac{5}{8} \times -\frac{3}{7} = \frac{-5 \times -3}{8 \times 7}$

$= \frac{15}{56} = \frac{56}{15}$ Ans

(9) Write the following rational numbers in standard form

(i) $\frac{17}{-25}$ (ii) $\frac{-14}{-35}$ (iii) $\frac{-27}{72}$

Sol (i) $\frac{17}{-25} = \frac{-17}{25}$, denominator should be Positive

(ii) $\frac{-14}{-35} = \frac{14}{35} \div \frac{7}{7} = \frac{2}{5}$ (Divided by HCF of 14 and 35)

(iii) $\frac{-27}{72} = \frac{-27}{72} \div \frac{9}{9} = \frac{-3}{8}$ (Divided by HCF of 27 and 72)

(10) Find the sum of $\frac{-15}{4}$ and $\frac{-5}{8}$

Sol $\left(\frac{-15}{4}\right) + \left(\frac{-5}{8}\right)$ ⇒ Taking LCM of 4 and 8 = 8

$= \frac{-30 + (-5)}{8} = \frac{-35}{8}$ Ans

H. W.

(1) Write any five positive rational numbers

(2) Comare → $\frac{-9}{-11}$ and $\frac{5}{-17}$

(3) Write the smallest whole number.

(4) Write first five Prime numbers.

(5) Find the absolute value of (i) $\frac{-11}{23}$ (ii) $\frac{1}{4} \times \frac{-5}{6}$

(6) Write the additive inverse of (i) $\frac{-5}{11}$ (ii) $\frac{-9}{-22}$

(7) Write the multiplicative inverse (reciprocal) of (i) $\frac{6}{9}$ (ii) $\frac{-7}{3} \times \frac{4}{5}$

(8) Add → $\frac{5}{6} + \left(\frac{-11}{12}\right)$

(9) Subtract → $\frac{1}{5}$ from $\frac{3}{5}$

(10) Subtract $\frac{-4}{15}$ from $\frac{3}{10}$.