



Time: 1 hr 20 min.  
 General Instructions:-

M.M.: 30

I. All questions are compulsory.

Q.No.	Questions	Marks
Section-A		
1.	Multiplicative inverse of $\frac{-11}{17}$ is- a) $\frac{11}{-17}$ b) $\frac{-17}{11}$ c) $\frac{11}{17}$ d) $\frac{17}{11}$	1
2.	Identity element of subtraction of rational number is- a) 1      b) 0      c) -1      d) does not exist	1
3.	Absolute value of $\frac{-7}{8}$ is - a) $\frac{7}{-8}$ b) $\frac{-8}{7}$ c) $\frac{8}{7}$ d) $\frac{7}{8}$	1
4.	$\frac{3}{5} \times \frac{-4}{11} = \frac{-4}{11} \times \dots\dots\dots$	1
5.	Assertion: Rational numbers are not commutative for subtraction. Reason: Rational numbers are commutative under addition and multiplication. (a) Both assertion and reason are correct and reason is the correct explanation of assertion. (b) Both assertion and reason are correct and reason is not the correct explanation of assertion. (c) Assertion is true but reason is false. (d) Assertion is false but reason is true.	1
Section-B		
6.	Represent $\frac{5}{7}$ on a number line.	2
7.	Find the value of x. $\frac{7}{9} = \frac{x}{-63}$	2
8.	Find two rational numbers between $\frac{4}{9}$ and $\frac{-2}{3}$	2
9.	By what number should we multiply $\frac{-2}{5}$ , so that the product may be 12?	2
10.	Simplify: $\frac{7}{3} \times (\frac{9}{8} + \frac{3}{4})$	2
Section-C		
11.	Arrange the following rational numbers in ascending order. $\frac{3}{5}, \frac{-3}{4}, \frac{7}{10}, \frac{-5}{-8}$	3
12.	i) Compare the following: $\frac{11}{15}, \frac{-9}{10}$ ii) Write $\frac{35}{-40}$ in standard form.	3
13.	Simplify: $\frac{3}{4} + \frac{2}{-5} - \frac{9}{10} + \frac{7}{10}$	3
14.	Verify that $x+(y+z)=(x+y)+z$ for the following values: $x = \frac{3}{5}, y = \frac{-5}{6}, z = \frac{7}{15}$	3
15.	Find the value of $x - y$ and $y - x$ for $x = \frac{11}{13}$ and $y = \frac{-9}{26}$ . Are they equal?	3



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Q.No.	Questions	Marks
Section-A		
1.	$\frac{3}{5} \times \dots = \frac{-3}{5}$	1
2.	Multiplicative inverse of $\frac{-7}{8}$ is – a) $\frac{7}{-8}$ b) $\frac{-8}{7}$ c) $\frac{8}{7}$ d) $\frac{7}{8}$	1
3.	Identity element of multiplication of rational number is- a) 1                      b) 0                      c) -1                      d) does not exist	1
4.	Absolute value of $\frac{-4}{9}$ is- a) $\frac{4}{-9}$ b) $\frac{-9}{4}$ c) $\frac{4}{9}$ d) $\frac{9}{4}$	1
5.	Assertion: Rational numbers are not commutative for addition. Reason: Rational numbers are commutative under addition and multiplication. (a) Both assertion and reason are correct and reason is the correct explanation of assertion. (b) Both assertion and reason are correct and reason is not the correct explanation of assertion. (c) Assertion is true but reason is false. (d) Assertion is false but reason is true.	1
Section-B		
6.	Simplify: $\frac{1}{3} \times (\frac{5}{8} + \frac{1}{6})$	2
7.	By what number should we added to $\frac{-3}{7}$ , so that the sum may be equal $\frac{5}{14}$ ?	2
8.	Represent $\frac{4}{9}$ on a number line.	2
9.	Find the value of x. $\frac{5}{35} = \frac{x}{-63}$	2
10.	Find two rational numbers between $\frac{3}{5}$ and $\frac{-3}{4}$	2
Section-C		
11.	Verify that $x+(y+z)=(x+y)+z$ for the following values: $x = \frac{2}{9}$ , $y = \frac{-1}{6}$ , $z = \frac{11}{12}$	3
12.	Simplify: $\frac{3}{7} + \frac{2}{-5} - \frac{5}{14} + \frac{7}{10}$	3
13.	i) Compare the following: $\frac{12}{17}$ , $\frac{-3}{7}$ ii) Write $\frac{30}{-45}$ in standard form.	3
14.	Arrange the following rational numbers in ascending order. $\frac{5}{6}$ , $\frac{-7}{10}$ , $\frac{4}{5}$ , $\frac{-7}{-12}$	3
15.	Find the value of $x - y$ and $y - x$ for $x = \frac{7}{9}$ and $y = \frac{-9}{12}$ . Are they equal?	3



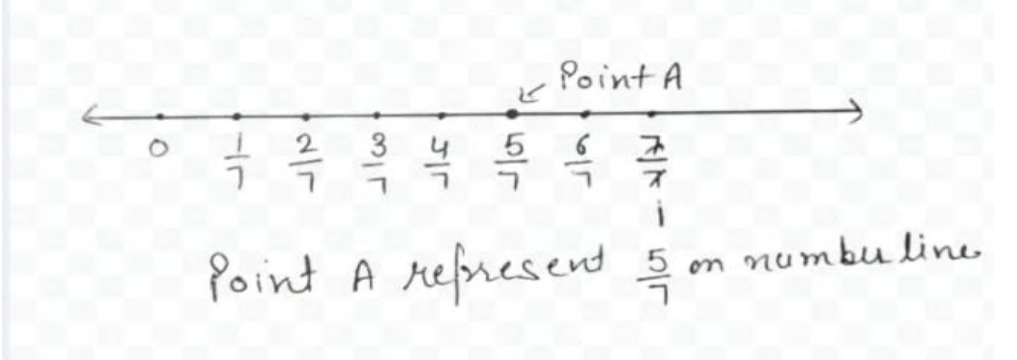
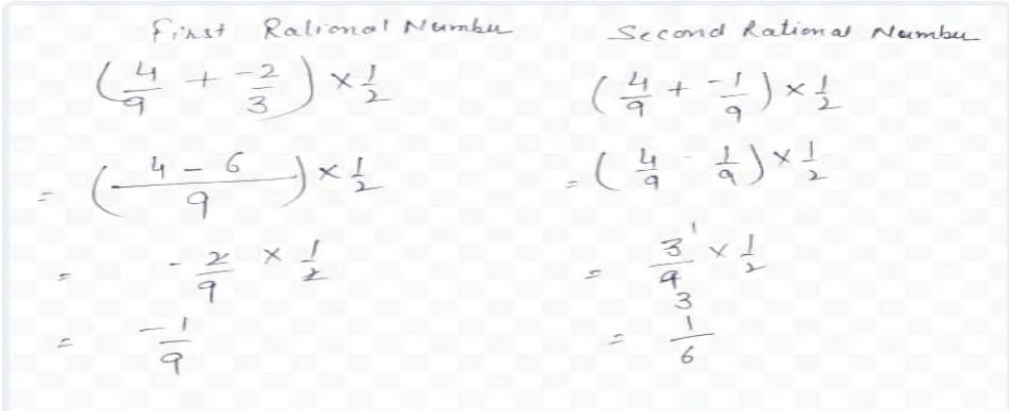


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General Instructions:-

I. All questions are compulsory.

Q.No.	Value Points/Key Points	Marks allotted to each value point	Marks
Section-A			
1.	b) $\frac{-17}{11}$	1	1
2.	d) does not exist	1	1
3.	d) $\frac{7}{8}$	1	1
4.	$\frac{3}{5}$	1	1
5.	(b) Both assertion and reason are correct and reason is not the correct explanation of assertion.	1	1
Section-B			
6.		2	2
7.	Find the value of x. $\frac{7}{9} = \frac{x}{-63}$ $9 \times x = -63 \times 7$ $x = \frac{-63 \times 7}{9}$ $x = -49$	$\frac{1}{2}$ 1 $\frac{1}{2}$	2
8.		1+1	2
9.	Let the number should be multiply = x	$\frac{1}{2}$	2

	$\frac{-2}{5} \times x = 12$ $x = 12 \div \frac{-2}{5}$ $x = 12 \times \frac{-5}{2}$ $x = -30$	$\frac{1}{2}$  1	
10.	<p>Simplify: <math>\frac{7}{3} \times (\frac{9}{8} + \frac{3}{4})</math></p> $\frac{7}{3} \times (\frac{9+6}{8})$ $\frac{7}{3} \times \frac{15}{8}$ $= \frac{35}{8}$	2	2
Section-C			
11.		$\frac{1}{2}$  $1\frac{1}{2}$  1	3
12.		$1\frac{1}{2}$  $1\frac{1}{2}$	3
13.	<p>Simplify:</p> $\frac{3}{4} + \frac{2}{-5} - \frac{9}{10} + \frac{7}{10}$ $\frac{15-8-18+14}{20}$ $= \frac{29-26}{20}$	$\frac{1}{2} + \frac{1}{2}$ +2	3

$$= \frac{3}{20}$$

14.

$$\begin{array}{l} \text{L.H.S} \\ x + (y+2) \\ \frac{3}{5} + \left( \frac{-5}{6} + \frac{7}{15} \right) \\ \frac{3}{5} + \left( \frac{-25+14}{30} \right) \\ \frac{3}{5} + \frac{-11}{30} \\ = \frac{18-11}{30} \\ = \frac{7}{30} \end{array}$$
$$\begin{array}{l} \text{R.H.S} \\ (x+y)+2 \\ \left( \frac{3}{5} + \frac{-5}{6} \right) + \frac{7}{15} \\ \left( \frac{18-25}{30} \right) + \frac{7}{15} \\ \frac{-7}{30} + \frac{7}{15} \\ \frac{-7+14}{30} \\ \frac{7}{30} \end{array}$$

L.H.S = R.H.S  
Hence verified

$$1\frac{1}{2} + 1\frac{1}{2}$$

15.

$$\begin{array}{l} x - y \\ \frac{11}{13} - \frac{-9}{26} \\ \frac{11}{13} + \frac{9}{26} \\ \frac{22+9}{26} \\ \frac{31}{26} \end{array}$$
$$\begin{array}{l} y - x \\ \frac{-9}{26} - \frac{11}{13} \\ \frac{-9-22}{26} \\ \frac{-31}{26} \end{array}$$
$$\frac{31}{26} \neq \frac{-31}{26}$$

No they are not equal.

$$1\frac{1}{2} + 1\frac{1}{2}$$

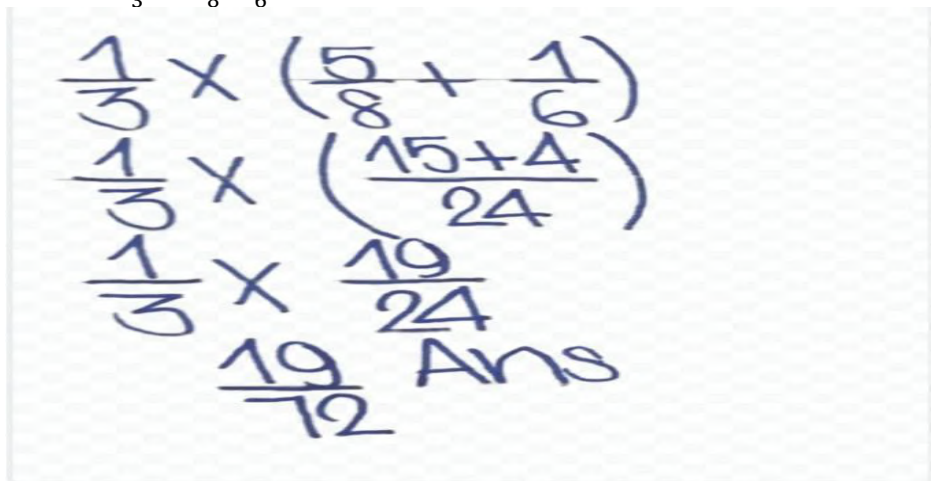
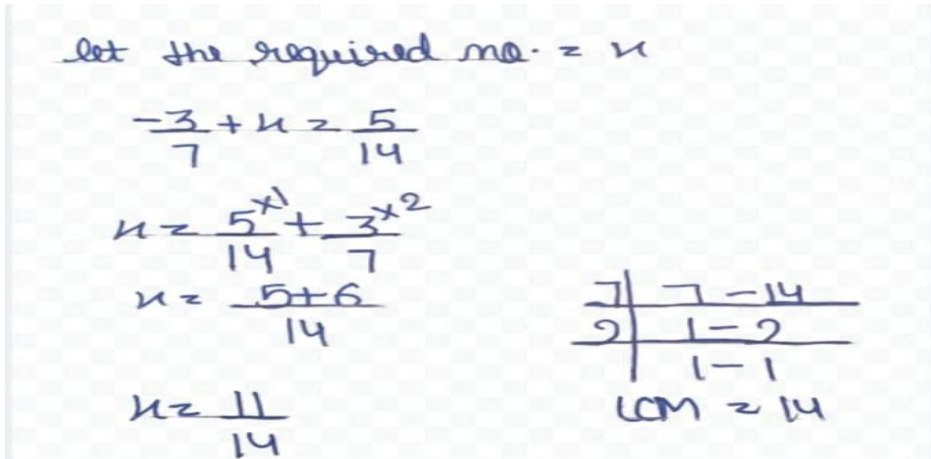


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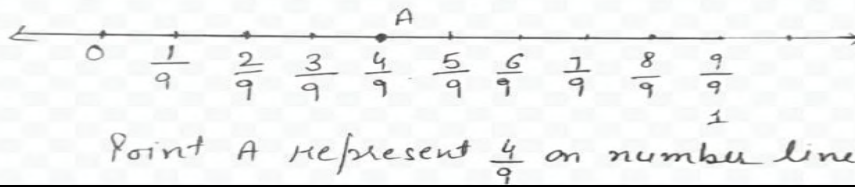
M.M.: 30

General Instructions:-

I. All questions are compulsory.

Q.No.	Value Points/Key Points	Marks allotted to each value point	Marks
Section-A			
1.	-1	1	1
2.	b) $-\frac{8}{7}$	1	1
3.	a) 1	1	1
4.	c) $\frac{4}{9}$	1	1
5.	(d) Assertion is false but reason is true.	1	1
Section-B			
6.	Simplify: $\frac{1}{3} \times \left(\frac{5}{8} + \frac{1}{6}\right)$ 	1+1	2
7.	By what number should we added to $\frac{-3}{7}$ , so that the sum may be equal $\frac{5}{14}$ ? 	1/2     1/2   1	2
8.	Represent $\frac{4}{9}$ on a number line.	2	2





9. Find the value of x.

$$\frac{5}{35} = \frac{x}{-63}$$

$$\begin{aligned} \frac{5}{35} & \rightarrow \frac{x}{-63} \\ -63 \times 5 & = 35 \times x \\ -315 & = 35x \\ \frac{-315}{35} & = x \\ -9 & = x \end{aligned}$$

$\frac{1}{2}$

$\frac{1}{2}$

$\frac{1}{2}$

$\frac{1}{2}$

2

10. Find two rational numbers between  $\frac{3}{5}$  and  $\frac{-3}{4}$

1st Number

$$\begin{aligned} \frac{1}{2} \times \left( \frac{3}{5} + \frac{-3}{4} \right) \\ = \frac{1}{2} \times \left( \frac{12-15}{20} \right) \\ = \frac{1}{2} \times \frac{-3}{20} \\ = \frac{-3}{40} \end{aligned}$$

2nd Number

$$\begin{aligned} \frac{1}{2} \times \left( \frac{3}{5} + \frac{-3}{40} \right) \\ = \frac{1}{2} \times \left( \frac{24-3}{40} \right) \\ = \frac{1}{2} \times \left( \frac{21}{40} \right) \\ = \frac{21}{80} \end{aligned}$$

$\frac{3}{5}, \frac{-3}{40}, \frac{-3}{4}$

$\frac{3}{5}, \frac{21}{80}, \frac{-3}{40}, \frac{-3}{4}$

1+1

2

Section-C

11. Verify that  $x+(y+z)=(x+y)+z$  for the following values:

$$x = \frac{2}{9}, y = \frac{-1}{6}, z = \frac{11}{12}$$

$$\begin{aligned} x + (y + z) \\ \frac{2}{9} + \left( \frac{-1}{6} + \frac{11}{12} \right) \\ \frac{2}{9} + \left( \frac{-2+11}{12} \right) \\ \frac{2 \times 4}{9} + \frac{9 \times 3}{12} \\ \frac{8+27}{36} \\ \frac{35}{36} \end{aligned}$$

$$\begin{aligned} (x+y) + z \\ \left( \frac{2}{9} + \frac{-1}{6} \right) + \frac{11}{12} \\ \left( \frac{2 \times 2}{9} - \frac{1 \times 3}{6} \right) + \frac{11}{12} \\ \left( \frac{4-3}{18} \right) + \frac{11}{12} \\ \frac{1 \times 2}{18} + \frac{11 \times 3}{12} \\ \frac{2+33}{36} \\ \frac{35}{36} \end{aligned}$$

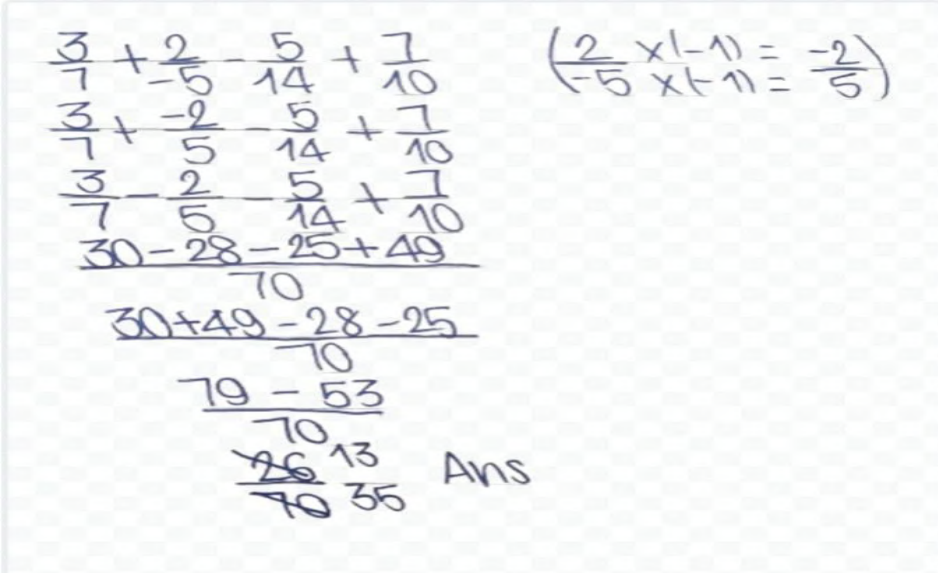
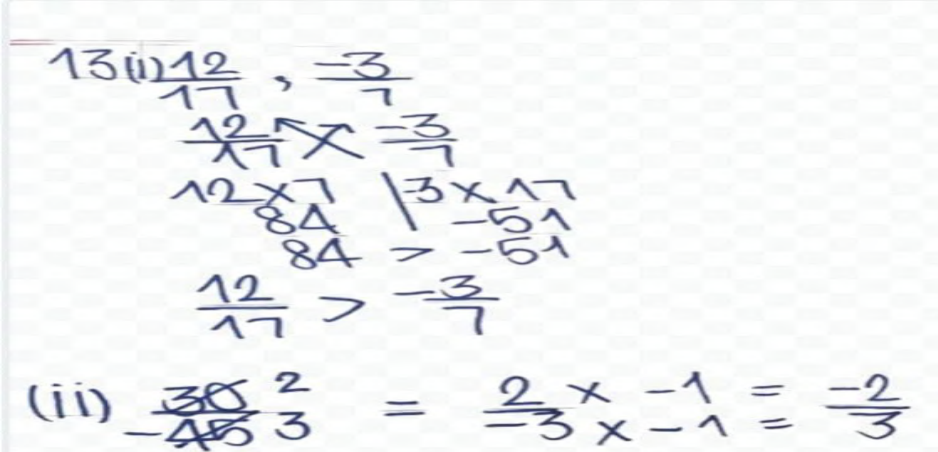
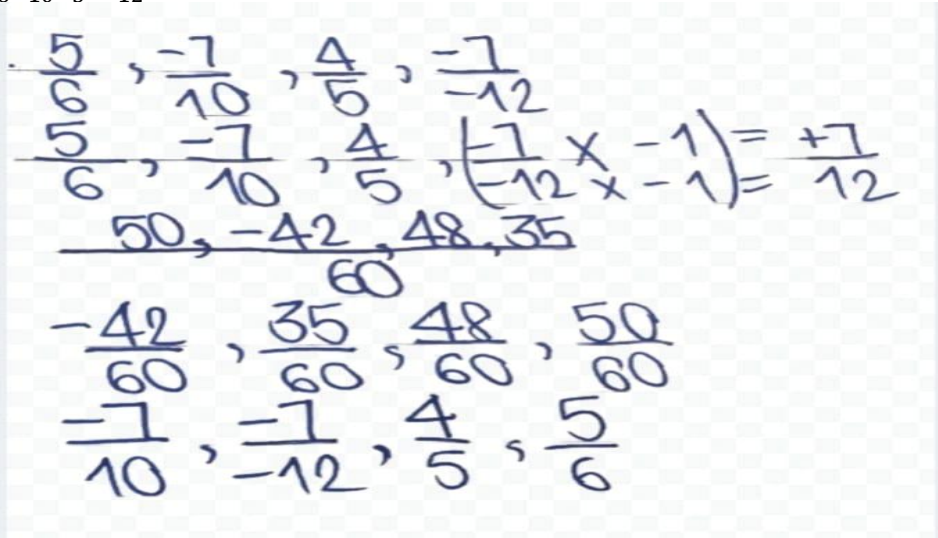
Hence verified

$1 \frac{1}{2} + 1$

$\frac{1}{2}$

3



12.	<p>Simplify:</p> $\frac{3}{7} + \frac{2}{-5} - \frac{5}{14} + \frac{7}{10}$  <p>Handwritten solution for question 12 showing the simplification of the rational expression. It includes a common denominator of 70, conversion of each fraction, and a final result of <math>\frac{26}{35}</math>.</p>	<p>3</p> <p><math>\frac{1}{2}</math></p> <p>2</p> <p><math>\frac{1}{2}</math></p>
13.	<p>i) Compare the following:  <math>\frac{12}{17}</math>, <math>\frac{-3}{7}</math></p> <p>ii) Write <math>\frac{30}{-45}</math> in standard form.</p>  <p>Handwritten solution for question 13. Part (i) compares <math>\frac{12}{17}</math> and <math>\frac{-3}{7}</math> by finding a common denominator of 119. Part (ii) simplifies <math>\frac{30}{-45}</math> to <math>-\frac{2}{3}</math>.</p>	<p>3</p> <p><math>1\frac{1}{2}</math></p> <p><math>1\frac{1}{2}</math></p>
14.	<p>Arrange the following rational numbers in ascending order.  <math>\frac{5}{6}</math>, <math>\frac{-7}{10}</math>, <math>\frac{4}{5}</math>, <math>\frac{-7}{-12}</math></p>  <p>Handwritten solution for question 14 showing the conversion of fractions to a common denominator of 60 and their arrangement in ascending order.</p>	<p>3</p> <p><math>\frac{1}{2}</math></p> <p><math>1\frac{1}{2}</math></p> <p>1</p>

15.

Find the value of  $x - y$  and  $y - x$  for  $x = \frac{7}{9}$  and  $y = \frac{-9}{12}$ . Are they equal? $1\frac{1}{2} + 1$   
 $\frac{1}{2}$ 

3

$$\begin{array}{r|l}
 \begin{array}{r}
 x - y \\
 \frac{7}{9} - \frac{-9}{12} \\
 \frac{7 \times 4}{9} + \frac{9 \times 3}{12} \\
 \frac{28 + 27}{36} \\
 \frac{55}{36}
 \end{array} &
 \begin{array}{r}
 y - x \\
 \frac{-9 \times 3}{12} - \frac{7 \times 4}{9} \\
 \frac{-27 - 28}{36} \\
 \frac{-55}{36}
 \end{array} \\
 \hline
 \frac{55}{36} \neq \frac{-55}{36} \\
 \text{Hence verified} \\
 \text{No, they are not equal}
 \end{array}$$