

Ch-1 Rational Numbers

1. Represent $\frac{7}{4}$ on the number line.
2. Write five rational numbers greater than -2 .
3. **State True or False**
 - i. When we multiply a rational number with 1 we get same number.
 - ii. A rational number is always a whole number.
 - iii. All the whole numbers are rational numbers.
 - iv. All the integers are rational numbers.
4. **Fill in the blanks**
 - a. Zero has _____ reciprocal.
 - b. The product of a rational no. and its inverse is _____.
 - c. The numbers 5 and -5 are their own _____.
 - d. The number _____ is not the reciprocal of any number.
5. **Match the columns**

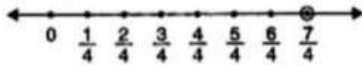
Column A	Column B
i. The multiplicative inverse of $1\frac{7}{11}$	a. Not defined
ii. The reciprocal of -1	b. $-1\frac{7}{11}$
iii. The reciprocal of 0	c. -1
iv. Negative of $1\frac{7}{11}$	d. $\frac{11}{18}$

6. Represent $\frac{3}{4}$ on the number line.
 7. Arrange in ascending order
 $\frac{2}{5}, \frac{1}{3}, \frac{-3}{4}, \frac{1}{6}$
 8. Which is greater?
 - a. $\frac{9}{-13}$ and $\frac{7}{-12}$
 - b. $\frac{-8}{9}$ and $\frac{-9}{10}$
 9. using appropriate properties find : $\frac{2}{5} \times \left(-\frac{3}{7}\right) - \frac{1}{6} \times \frac{3}{2} + \frac{1}{14} \times \frac{2}{5}$.
-

SOLUTIONS

CLASS-8

1. $\frac{7}{4} = 1\frac{3}{4}$



2. Five rational numbers greater than -2 are :

$$\frac{-3}{2}, -1, \frac{-1}{2}, 0, \frac{1}{2}$$

3. i. True
 ii. False, it is not necessary that every rational number is whole number.
 iii. True
 iv. True

4. a. No
 b. One
 c. **Negative**
 d. Zero

5. a. -d
 b. -c
 c. -a
 d. -b

6. Divide the number line into 4 equal parts starting from $\frac{0}{4}, \frac{1}{4}, \dots, \frac{4}{4}$ on the right side of number line. Bold mark $\frac{3}{4}$ as asked in the question and mark it as any alphabet like A.



7. LCM of 5, 3, 4 and 6 is 60.

So, $\frac{(12, 20, -15, 10)}{60}$
 Ascending order: $\frac{-45}{60}, \frac{10}{60}, \frac{12}{60}, \frac{20}{60}$

8. a. $\frac{(9 \times (-1))}{(-13 \times (-1))} = \left(\frac{-9}{13}\right)$ and $\frac{(7 \times (-1))}{(-12 \times (-1))} = \left(\frac{-7}{12}\right)$

LCM of 13 and 12 is 156

$$\frac{(-108, -91)}{156}$$

$$\frac{-108}{156} < \frac{-91}{156}$$

Hence, $\frac{-7}{12}$ is greater

b. LCM of 9 and 10 is 90.

$$\frac{(-80, -81)}{90}$$

$$\frac{-81}{90} < \frac{-80}{90}$$

Hence, $\frac{-8}{9}$ is greater.

9. $\frac{2}{5} \times \left(-\frac{3}{7}\right) - \frac{1}{6} \times \frac{3}{2} + \frac{1}{4} \times \frac{2}{5}$
 $= \frac{2}{5} \times \left(-\frac{3}{7}\right) - \frac{1}{6} \times \frac{3}{2} + \frac{2}{5} \times \frac{1}{4} \dots$ [By commutativity]
 $= \frac{2}{5} \times \left(-\frac{3}{7}\right) + \frac{2}{5} \times \frac{1}{4} - \frac{1}{6} \times \frac{3}{2} \dots$ [By associativity]
 $= \frac{2}{5} \times \left\{ \left(-\frac{3}{7}\right) + \frac{1}{4} \right\} - \frac{1}{6} \times \frac{3}{2} \dots$ [By distributivity]
 $= \frac{2}{5} \times \left\{ \frac{(-6)+1}{14} \right\} - \frac{1}{6} \times \frac{3}{2}$
 $= \frac{2}{5} \times \left\{ \frac{-5}{14} \right\} - \frac{1}{6} \times \frac{3}{2} = \frac{-7}{7} - \frac{1}{4}$
 $= \frac{-4-7}{28} = \frac{-11}{28}$