

Q1 :

Name the property under multiplication used in each of the following:

$$(i) \frac{-4}{5} \times 1 = 1 \times \frac{-4}{5} = \frac{-4}{5}$$

$$(ii) \frac{-13}{17} \times \frac{-2}{7} = \frac{-2}{7} \times \frac{-13}{17}$$

$$(iii) \frac{-19}{29} \times \frac{29}{-19} = 1$$

Answer :

$$(i) \frac{-4}{5} \times 1 = 1 \times \frac{-4}{5} = \frac{-4}{5}$$

1 is the multiplicative identity.

(ii) Commutativity

(iii) Multiplicative inverse

Q2 :

Tell what property allows you to compute $\frac{1}{3} \times \left(6 \times \frac{4}{3} \right)$ as $\left(\frac{1}{3} \times 6 \right) \times \frac{4}{3}$.

Answer :

Associativity

(v) The product of two rational numbers is always a _____.

Q8 :

Is $\frac{8}{9}$ the multiplicative inverse of $-1\frac{1}{8}$? Why or why not?

Answer :

If it is the multiplicative inverse, then the product should be 1.

However, here, the product is not 1 as

$$\frac{8}{9} \times \left(-1\frac{1}{8}\right) = \frac{8}{9} \times \left(-\frac{9}{8}\right) = -1 \neq 1$$

Q9 :

Is 0.3 the multiplicative inverse of $3\frac{1}{3}$? Why or why not?

Answer :

$$3\frac{1}{3} = \frac{10}{3}$$

$$0.3 \times 3\frac{1}{3} = 0.3 \times \frac{10}{3} = \frac{3}{10} \times \frac{10}{3} = 1$$

Here, the product is 1. Hence, 0.3 is the multiplicative inverse of $3\frac{1}{3}$.

Q10 :

Write:

- (i) The rational number that does not have a reciprocal.
- (ii) The rational numbers that are equal to their reciprocals.
- (iii) The rational number that is equal to its negative.

Answer :

- (i) 0 is a rational number but its reciprocal is not defined.
- (ii) 1 and -1 are the rational numbers that are equal to their reciprocals.
- (iii) 0 is the rational number that is equal to its negative.

Q11 :

Fill in the blanks.

- (i) Zero has _____ reciprocal.
- (ii) The numbers _____ and _____ are their own reciprocals
- (iii) The reciprocal of - 5 is _____.
- (iv) Reciprocal of $\frac{1}{x}$, where $x \neq 0$ is _____.

(vi) The reciprocal of a positive rational number is _____.

Answer :

- (i) No
- (ii) 1, - 1

(iii) $-\frac{1}{5}$

(iv) x

(v) Rational number

(vi) Positive rational number

Exercise 1.2 : Solutions of Questions on Page Number : 20

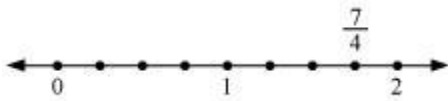
Q1 :

Represent these numbers on the number line.

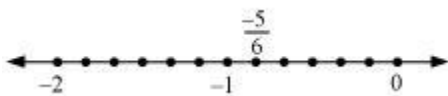
(i) $\frac{7}{4}$ (ii) $-\frac{5}{6}$

Answer :

(i) $\frac{7}{4}$ can be represented on the number line as follows.



(ii) $-\frac{5}{6}$ can be represented on the number line as follows.

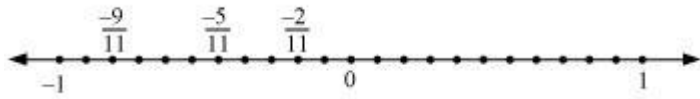


Q2 :

Represent $\frac{-2}{11}$, $\frac{-5}{11}$, $\frac{-9}{11}$ on the number line.

Answer :

$\frac{-2}{11}, \frac{-5}{11}, \frac{-9}{11}$ can be represented on the number line as follows.



Q3 :

Write five rational numbers which are smaller than 2.

Answer :

2 can be represented as $\frac{14}{7}$.

Therefore, five rational numbers smaller than 2 are

$$\frac{13}{7}, \frac{12}{7}, \frac{11}{7}, \frac{10}{7}, \frac{9}{7}$$

Q4 :

Find ten rational numbers between $\frac{-2}{5}$ and $\frac{1}{2}$.

Answer :

$\frac{-2}{5}$ and $\frac{1}{2}$ can be represented as $-\frac{8}{20}$ and $\frac{10}{20}$ respectively.

Therefore, ten rational numbers between $\frac{-2}{5}$ and $\frac{1}{2}$ are

$$-\frac{7}{20}, -\frac{6}{20}, -\frac{5}{20}, -\frac{4}{20}, -\frac{3}{20}, -\frac{2}{20}, -\frac{1}{20}, 0, \frac{1}{20}, \frac{2}{20}$$

Q5 :

Find five rational numbers between

(i) $\frac{2}{3}$ and $\frac{4}{5}$

(ii) $\frac{-3}{2}$ and $\frac{5}{3}$

(iii) $\frac{1}{4}$ and $\frac{1}{2}$

Answer :

(i) $\frac{2}{3}$ and $\frac{4}{5}$ can be represented as $\frac{30}{45}$ and $\frac{36}{45}$ respectively.

Therefore, five rational numbers between $\frac{2}{3}$ and $\frac{4}{5}$ are

$$\frac{31}{45}, \frac{32}{45}, \frac{33}{45}, \frac{34}{45}, \frac{35}{45}$$

(ii) $\frac{-3}{2}$ and $\frac{5}{3}$ can be represented as $\frac{-9}{6}$ and $\frac{10}{6}$ respectively.

Therefore, five rational numbers between $\frac{-3}{2}$ and $\frac{5}{3}$ are

$$-\frac{8}{6}, -\frac{7}{6}, -1, -\frac{5}{6}, -\frac{4}{6}$$

(iii) $\frac{1}{4}$ and $\frac{1}{2}$ can be represented as $\frac{8}{32}$ and $\frac{16}{32}$ respectively.

Therefore, five rational numbers between $\frac{1}{4}$ and $\frac{1}{2}$ are

$$\frac{9}{32}, \frac{10}{32}, \frac{11}{32}, \frac{12}{32}, \frac{13}{32}$$

Q6 :

Write five rational numbers greater than - 2.

Answer :

- 2 can be represented as $-\frac{14}{7}$.

Therefore, five rational numbers greater than - 2 are

$$-\frac{13}{7}, -\frac{12}{7}, -\frac{11}{7}, -\frac{10}{7}, -\frac{9}{7}$$

Q7 :

Find ten rational numbers between $\frac{3}{5}$ and $\frac{3}{4}$.

Answer :

$\frac{3}{5}$ and $\frac{3}{4}$ can be represented as $\frac{48}{80}$ and $\frac{60}{80}$ respectively.

Therefore, ten rational numbers between $\frac{3}{5}$ and $\frac{3}{4}$ are

$$\frac{49}{80}, \frac{50}{80}, \frac{51}{80}, \frac{52}{80}, \frac{53}{80}, \frac{54}{80}, \frac{55}{80}, \frac{56}{80}, \frac{57}{80}, \frac{58}{80}$$