

Rational Numbers

Question 1.

Write denominator of given rational number : 5

- (a) 1
- (b) 0
- (c) 3
- (d) none of these

Answer: (a) 1

If there is no denominator then 1 is always the denominator.

Question 2.

Reduce to standard form : $\frac{-3}{-15}$

- (a) $\frac{1}{5}$
- (b) $\frac{-1}{5}$
- (c) $\frac{-1}{-5}$
- (d) none of these

Answer: (a) $\frac{1}{5}$

HCF of numerator and denominator is 3 and both have negative sign so result is positive. Standard form is obtained by dividing by 3.

Question 3.

The numbers used for counting objects are called :

- (a) Natural numbers
- (b) Whole numbers
- (c) Integers
- (d) None of these

Answer: (a) Natural numbers

Counting objects are always positive and more than zero.

Question 4.

Reduce to standard form $\frac{-36}{24}$

- (a) $\frac{6}{4}$
- (b) $\frac{-3}{2}$
- (c) $\frac{4}{6}$
- (d) none of these

Answer: (b) $\frac{-3}{2}$

HCF of numerator and denominator is 12. Standard form is obtained by divided 12.

Question 5.

Fractions are in the form of:

- (a) $\frac{\text{numerator}}{0}$
- (b) $\frac{\text{numerator}}{\text{denominator}}$
- (c) $\frac{\text{denominator}}{\text{numerator}}$
- (d) None of these

Answer: (b) $\frac{\text{numerator}}{\text{denominator}}$

Definition of a fraction.

Question 6.

Rational number between -2 and -1.

- (a) $\frac{3}{2}$
- (b) 3
- (c) $\frac{-3}{2}$
- (d) none of these

Answer: (c) $\frac{-3}{2}$

Sum of two given numbers is divided by 2.

Question 7.

Give equivalent number to $\frac{-2}{7}$

- (a) $\frac{-4}{14}$
- (b) $\frac{4}{14}$

(c) $\frac{-4}{-14}$

(d) none of these

Answer: (a) $\frac{x}{y}$

Both numerator and denominator is multiplied by same number.

Question 8.

Rewrite the number $\frac{25}{45}$ in the simplest form :

(a) $\frac{5}{45}$

(b) $\frac{5}{9}$

(c) $\frac{9}{5}$

(d) none of these

Answer: (b) $\frac{5}{9}$

HCF of numerator and denominator is 5. Simplest form is obtained by dividing both by 5.

Question 9.

Write correct symbol $\frac{-5}{7}$ $\square$ $\frac{2}{3}$

(a) $<$ (b) $>$

(c) $=$

(d) none of these

Answer: (a) $<$

Positive number is always greater than negative.

Question 10.

Write correct symbol $\frac{-5}{11}$ $\square$ $\frac{-5}{11}$

(a) $=$

(b) $>$

(c) $<$

(d) none of these

Answer: (a) $=$

Both have same sign, numerator and denominator.

Question 11.

Write correct symbol $0 \square \frac{-7}{6}$

- (a) $<$ (b) $=$ (c) $>$
- (d) none of these

Answer: (c) $>$

Zero is greater than negative rational numbers.

Question 12.

Additive inverse of $\frac{4}{7}$ is :

- (a) $\frac{-4}{7}$
- (b) $\frac{-4}{-7}$
- (c) $\frac{7}{4}$
- (d) none of these

Answer: (a) $\frac{-4}{7}$

Number which when added the result becomes zero.

Question 13.

Find the product $\frac{3}{11} \times \frac{2}{5}$

- (a) $\frac{6}{55}$
- (b) $\frac{5}{55}$
- (c) $\frac{-6}{55}$
- (d) none of these

Answer: (a) $\frac{6}{55}$

Numerator is multiplied by numerator and denominator is multiplied by denominator.

Question 14.

The value of $\frac{-1}{8} \div \frac{3}{4}$ is

- (a) $\frac{-1}{6}$
- (b) $\frac{1}{6}$
- (c) $\frac{6}{1}$
- (d) none of these

Answer: (a) $\frac{-1}{6}$

First number is multiplied by reciprocal of another.

Question 15.

Find the product $\frac{9}{2} \times \frac{-7}{4}$

- (a) $\frac{63}{8}$
- (b) $\frac{8}{63}$
- (c) $\frac{-63}{8}$
- (d) none of these

Answer: (c) $\frac{-63}{8}$

Numerator is multiplied by numerator and denominator is multiplied by denominator. Result has negative sign.

Question 16.

Reciprocal of 1.

- (a) 0
- (b) 1
- (c) -1
- (d) none of these

Answer: (c) -1

Reciprocal of 1 is 1.

Question 17.

$\frac{4}{5}$ is a rational number of the form $\frac{p}{q}$ where p and q are :

- (a) $p = 4, q = 5$
- (b) $p = 5, q = 4$
- (c) none of these

Answer: (a) $p = 4, q = 5$

In a rational number numerator is denoted by p and denominator by q

Question 18.

$\frac{2}{3}$ is

- (a) Positive rational number

- (b) Negative rational number
- (c) None of these

Answer: (a) Positive rational number
Both numerator and denominator are positive.

Question 19.

$\frac{-5}{7}$ is :

- (a) Positive rational number
- (b) Negative rational number
- (c) None of these

Answer: (b) Negative rational number
Numerator is positive and denominator is negative.

Question 20.

$\frac{-2}{-5}$ is :

- (a) Positive rational number
- (b) Negative rational number
- (c) None of these

Answer: (a) Positive rational number
Numerator and denominator both are negative.

Question 21.

0 is :

- (a) Positive rational number
- (b) Negative rational number
- (c) neither positive nor negative rational number
- (d) None of these

Answer: (c) neither positive nor negative rational number
As 0 lies in the centre of a number line.

Question 22.

Next number of given pattern is $\frac{-1}{3}$, $\frac{-2}{6}$, $\frac{-3}{9}$

- (a) $\frac{-4}{12}$
- (b) $\frac{-5}{12}$

- (c) $\frac{-6}{12}$
(d) none of these

Answer: (a) $\frac{-4}{12}$

Numerator and denominator of 1st rational number—is multiplied by 4.

Question 23.

Ascending order of $\frac{-3}{5}$, $\frac{-2}{5}$, $\frac{-1}{5}$

- (a) $\frac{-1}{5}$, $\frac{-2}{5}$, $\frac{-3}{5}$
(b) $\frac{-3}{5}$, $\frac{-2}{5}$, $\frac{-1}{5}$
(c) none of these

Answer: (b) $\frac{-3}{5}$, $\frac{-2}{5}$, $\frac{-1}{5}$

Denominator of each rational number is same. All rational numbers are negative so according to positive on number line ascending order is written

Question 24.

What number should be added to $(\frac{7}{12})$ to get $(\frac{5}{15})$?

- (a) $\frac{-19}{60}$
(b) -19
(c) $\frac{1}{2}$
(d) None of these

Answer: (a) $\frac{-19}{60}$

Question 25.

Reduce $\frac{-63}{99}$ to the standard form.

- (a) $\frac{11}{17}$
(b) $\frac{-7}{11}$
(c) $\frac{7}{11}$
(d) None of these

Answer: (b) $\frac{-7}{11}$

Question 26.

_____ is the identity for the addition of rational numbers.

- (a) 0
- (b) 1
- (c) -1
- (d) None of these

Answer: (a) 0

Question 27.

Which of the rational number is positive?

- (a) $\frac{3}{7}$
- (b) $\frac{-5}{7}$
- (c) $\frac{-4}{7}$
- (d) $\frac{-3}{7}$

Answer: (a) $\frac{3}{7}$

Question 28.

The product of two rational numbers is always a _____.

- (a) integer
- (b) rational number
- (c) natural number
- (d) whole number

Answer: (b) rational number

Question 29.

The numbers _____ and _____ are their own reciprocals.

- (a) -1 and 0
- (b) 1 and 0
- (c) 1 and -1
- (d) None of these

Answer: (c) 1 and -1

Question 30.

Which of the following pairs represent the same rational number?

- (a) $\frac{-7}{21}$ and $\frac{1}{3}$
- (b) $\frac{1}{3}$ and $\frac{-1}{9}$
- (c) $\frac{-5}{-9}$ and $\frac{5}{-9}$
- (d) $\frac{8}{-5}$ and $\frac{-24}{15}$

Answer: (d) $\frac{8}{-5}$ and $\frac{-24}{15}$

Question 31.

The product of two numbers is $\frac{-20}{9}$. If one of the numbers is 4, find the other.

- (a) $\frac{-5}{9}$
- (b) $\frac{3}{11}$
- (c) $\frac{12}{39}$
- (d) $\frac{-9}{11}$

Answer: (a) $\frac{-5}{9}$

Question 32.

Rewrite $\frac{-44}{72}$ in the simplest form.

- (a) $\frac{-18}{11}$
- (b) $\frac{-11}{18}$
- (c) $\frac{-11}{19}$
- (d) $\frac{-11}{20}$

Answer: (c) $\frac{-11}{19}$

Question 33.

What is the average of the two middle rational numbers if $\frac{4}{7}$, $\frac{1}{3}$, $\frac{2}{5}$ and $\frac{5}{9}$ are arranged in ascending order?

- (a) $\frac{80}{90}$
- (b) $\frac{86}{45}$
- (c) $\frac{43}{45}$
- (d) $\frac{43}{90}$

Answer: (d) $\frac{43}{90}$

Question 34.

If $\frac{-4}{7} = \frac{-32}{x}$, what is the value of x?

- (a) 56
- (b) -56
- (c) 46
- (d) -46

Answer: (a) 56

Question 35.

The rational number $\frac{9}{1}$ in integer is _____.

- (a) 0
- (b) 9
- (c) -9
- (d) 1

Answer: (b) 9

Question 36.

What is the result of $2 - \frac{11}{39} + \frac{5}{26}$?

- (a) $\frac{149}{39}$
- (b) $\frac{149}{78}$
- (c) $\frac{149}{76}$
- (d) $\frac{149}{98}$

Answer: (b) $\frac{149}{78}$

Question 37.

Associative property is not followed in _____

- (a) integers
- (b) whole numbers
- (c) rational numbers
- (d) natural numbers

Answer: (d) natural numbers

Question 38.

Which is the correct descending order of -2 , $\frac{4}{-5}$, $\frac{-11}{20}$, $\frac{3}{4}$?

- (a) $\frac{3}{4} > -2 > \frac{-11}{20} > \frac{4}{-5}$
- (b) $\frac{3}{4} > \frac{-11}{20} > \frac{4}{-5} > -2$
- (c) $\frac{3}{4} > \frac{4}{-5} > -2 > \frac{-11}{20}$
- (d) $\frac{3}{4} > \frac{4}{-5} > \frac{-11}{20} > -2$

Answer: (b) $\frac{3}{4} > \frac{-11}{20} > \frac{4}{-5} > -2$

Question 39.

Which of the following is not a rational number(s)?

- (a) $\frac{-2}{9}$
- (b) $\frac{4}{-7}$
- (c) $\frac{-3}{-17}$
- (d) $\frac{\sqrt{2}}{3}$

Answer: (d) $\frac{\sqrt{2}}{3}$

Question 40.

Write the rational number whose numerator is $4 \times (-7)$ and denominator is $(3 - 7) \times (15 - 11)$.

- (a) $\frac{16}{28}$
- (b) $\frac{8}{13}$
- (c) $\frac{13}{8}$
- (d) $\frac{28}{16}$

Answer: (d) $\frac{28}{16}$

Question 41.

The reciprocal of -5 is _____

- (a) 5
- (b) -5
- (c) $\frac{-1}{5}$
- (d) None of these

Answer: (c) $\frac{-1}{5}$

Match the following:

Question 1.

1. $\frac{-45}{30}$	a. $\frac{1}{2}$
2. $\frac{36}{-24}$	b. $\frac{-3}{2}$
3. $\frac{-3}{-15}$	c. $\frac{3}{-2}$
4. $\frac{1}{2}$	d. $\frac{1}{5}$

Answer:

1. $\frac{-45}{30}$	b. $\frac{-3}{2}$
2. $\frac{36}{-24}$	c. $\frac{3}{-2}$
3. $\frac{-3}{-15}$	d. $\frac{1}{5}$
4. $\frac{1}{2}$	a. $\frac{1}{2}$

Question 2. Additive Inverse

1. $\frac{-4}{7}$	a. -1
2. 1	b. $\frac{4}{7}$
3. $\frac{-3}{-5}$	c. $\frac{-3}{7}$
4. $\frac{3}{7}$	d. $\frac{-3}{5}$

Answer:

1. $\frac{-4}{7}$	b. $\frac{4}{7}$
2. 1	a. -1
3. $\frac{-3}{-5}$	d. $\frac{-3}{5}$
4. $\frac{3}{7}$	c. $\frac{-3}{7}$

Say true or false:

Question 1.

0, 2, 3, 4 ... by including 0 to natural numbers, we get whole number.

Answer: true

Question 2.

....-3, -2, -1, 0, 1, 2, 3 ... integers.

Answer: true

Question 3.

$\frac{p}{0}$ is a rational number.

Answer: false

Question 4.

The word 'rational' caries from the term 'ratio'.

Answer: true

Question 5.

The number 0 is neither a positive nor a negative rational number.

Answer: true

Question 6.

A positive rational number is to the right of zero on number line.

Answer: true

Question 7.

A negative rational number is to the left of zero on the number line.

Answer: true

Question 8.

We can find limited number of rational numbers between any two numbers.

Answer: false

Question 9.

$\frac{1}{3}$ and $\frac{-1}{9}$ represent the same rational numbers.

Answer: false

Question 10.

$\frac{-2}{9}$ is a negative rational number.

Answer: false

Fill in the blanks:

1. A _____ is defined as a number that can be expressed in the form $\frac{p}{q}$

Answer: rational number

2. Rational numbers include _____ and _____

Answer: integers, fractions

3. A rational number is called a positive rational number if both _____ and _____ are positive.

Answer: numerator, denominator

4. A rational number is called a _____ if either numerator or denominator is negative.

Answer: negative rational number

5. The number 0 is neither a _____ nor a _____ rational number.

Answer: positive, negative

6. If 1 is the only common factor between the numerator and denominator then rational number is called in the

Answer: standard form

7. To reduce the rational number to its standard form, we divide its numerator and denominator by their

Answer: HCF

8. A negative rational number is to the _____ of zero whereas a positive rational number is to the _____ of zero on a number line.

Answer: left, right

9. We can find _____ number of rational numbers between any two rational numbers.

Answer: unlimited

fill in the box with correct symbol <, >, and =

10. $\frac{-5}{7}$ $\square$ $\frac{2}{3}$

Answer: <

11. $\frac{-4}{5}$ $\square$ $\frac{-5}{7}$

Answer: <

12. $\frac{-7}{8}$ $\square$ $\frac{14}{-16}$

Answer: =

13. $\frac{-8}{5}$ $\square$ $\frac{-7}{5}$

Answer: <

14. $\frac{1}{3} \square \frac{-1}{4}$

Answer: >

15. To multiply two rational numbers we multiply their _____ and _____ separately.

Answer: numerator, denominator

16. To divide one rational number by the _____ other non zero-rational number, we multiply the rational number by the _____ of the other.

Answer: reciprocal
