

Chapter 1 : Rational Numbers

Question 1

Write the additive inverse of each of the following:

1. 1
2. $-\frac{1}{9}$
3. $-\frac{2}{3}$
4. 2
5. $-\frac{9}{1}$

Answer

(i) 1

Additive inverse = -1

(ii) $-\frac{1}{9}$

Additive inverse = $\frac{1}{9}$

(iii) $-\frac{2}{3}$

Additive inverse = $\frac{2}{3}$

(iv) 2

Additive inverse = -2

(v) $-\frac{9}{1}$

Additive inverse = 9

Question 2

What is the additive identity?

1. 1
2. -1
3. 0
4. None of the above

Answer 0

Question 3

True or False Statement

1. The difference of two rational number is a rational number
2. Addition of rational numbers is associative
3. Addition of rational numbers is commutative
4. Subtraction of rational numbers is not commutative
5. The addition or subtraction of two rational number is a rational number

Answer

All the statement are true

Question 4

Find the multiplicative inverse of the following.

1. $-11/12$
2. $-10/9$
3. $1/2$
4. $-5/2 \times -2/5$
5. $-1/2 \times -2/5$
6. -4

Answer

1. $-11/12$ Multiplicative inverse $= -12/11$
2. $-10/9$ Multiplicative inverse $= -9/10$
3. $1/2$ Multiplicative inverse $= 2$
4. $-5/2 \times -2/5 = 1$ Multiplicative inverse $= 1$
5. $-1/2 \times -2/5 = 1/5$ Multiplicative inverse $= 5$
6. -1

Multiplicative inverse $= -1/4$

Question 5

Which of these properties hold false for Multiplication of rational numbers?

1. Associative law
2. Closure law
3. Commutative law
4. Existence of Multiplicative identity
5. None of the these

Answer

None of these

Question 6

Find the below multiplication

1. $(-1/2) \times (9/10)$
2. $(25/-9) \times (1/3)$
3. $(7/24) \times 10$

Answer

1. $(-1/2) \times (9/10)$

$$= -1 \times 9/2 \times 10 = -9/20$$

2. $(25/-9) \times (1/3)$

$$= (-25/9) \times (1/3)$$

$$= -25 \times 1/9 \times 3 = -25/27$$

3. $(7/24) \times 10$

$$= 7 \times 10/24 = 70/24$$

Question 7

Find the following

1. $(1/2)^{-1}$
2. $(3)^{-1}$
3. $(-6)^{-1}$
4. $(1/-2)^{-1}$

Answer

1. Multiplicative inverse of $(1/2) = 2$
2. Multiplicative inverse of $(3) = 1/3$
3. Multiplicative inverse of $(-6) = -1/6$
4. Multiplicative inverse of $(1/-2) = -2$

Question 8

The product of two rational number is 2 , if one of the rational number is $1/7$,what is the value of other?

Answer:

Let a be the other number, then

$$a \times (1/7) = 2$$

Or

$$a = 2 \div (1/7)$$

$$a = 2 \times 7 = 14$$

Question 11

Fill in the blanks

- (i) $\frac{4}{5} \div (-3) = \frac{-4}{15}$
- (ii) The numbers 1 and -1 are their own reciprocals
- (iii) The reciprocal of 1 is 1 .
- (iv) $(1/2) \div (2/3) = \frac{3}{4}$.
- (v) The product of two rational numbers is always a rational number.
- (vi) The reciprocal of a negative rational number is negative.

Answer:

1. $4/5$
2. 1 and -1
3. 1
4. 3
5. Rational Number
6. Negative rational number

Question 12

Write five rational numbers which are smaller than 5

Answer:

0,1,2,3,4

Question 13

Find five rational numbers between (1) and 2

Answer:

We can write as

$$1 = 10/10$$

$$2 = 20/10$$

So five rational numbers will be

11/10, 12/10, 13/10, 14/10, 15/10