

Problem solving based on the above concept (Division of Rational numbers)

SUBJECT : MATHEMATICS
CHAPTER NUMBER: 02
CHAPTER NAME : RATIONAL NUMBERS

CHANGING YOUR TOMORROW

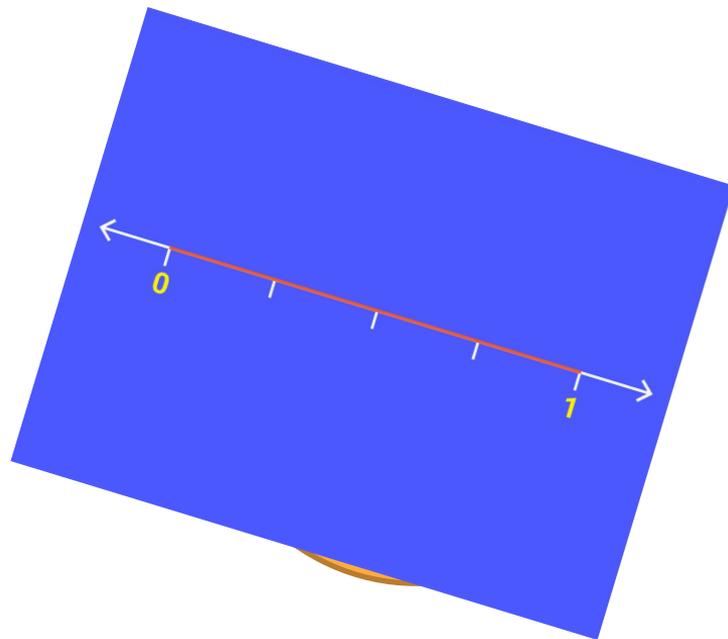
Learning outcomes

Students will be able to divide rational numbers



Video on

<https://www.youtube.com/watch?v=VMp7bm9khis> (6:46 minutes)



$$(iii) (3 \frac{5}{12} + 1 \frac{2}{3}) \div (3 \frac{5}{12} - 1 \frac{2}{3})$$

It can be written as

$$= [(12 \times 3 + 5)/ 12 + (3 \times 1 + 2)/ 3] \div [(12 \times 3 + 5)/ 12 - (3 \times 1 + 2)/ 3]$$

$$= (41/12 + 5/3) \div (41/12 - 5/3)$$

LCM of 12 and 3 is 12

$$= (41 + 20)/ 12 \div (41 - 20)/ 12$$

By further calculation

$$= 61/12 \div 21/12$$

We can write it as

$$= 61/12 \times 12/21$$

$$= 61/21$$

$$= 2 \frac{19}{21}$$

8. The product of two numbers is 14. If one of the numbers is $-8/7$, find the other.

Solution:

It is given that

$$\text{Product of two numbers} = 14$$

$$\text{One of the number} = -8/7$$

$$\text{Other number} = 14 \div -8/7$$

We can write it as

$$= 14 \times -7/8$$

$$= -98/8$$

$$= -49/4$$

11. By what number should $-3/8$ be multiplied so that the product is $-9/16$?

Solution:

$$\text{Number} = -3/8 \div (-9/16)$$

We can write it as

$$= -3/8 \times 16/-9$$

By further calculation

$$= 2/3$$

$$= 1 \frac{1}{2}$$

12. By what number should $-5/7$ be divided so that the result is $-15/28$?

Solution:

Consider the number as x

$$-5/7 \div x = -15/28$$

It can be written as

$$-5/7 \times 1/x = -15/28$$

By further calculation

$$-5/7x = -15/28$$

So we get

$$x = 5/7 \times 28/15 = 4/3$$

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

13. Evaluate: $(32/15 + 8/5) \div (32/15 - 8/5)$.

Solution:

It is given that

$$(32/15 + 8/5) \div (32/15 - 8/5)$$

LCM of 15 and 5 is 15

$$= [(32 \times 1)/(15 \times 1) + (8 \times 3)/(5 \times 3)] \div [(32 \times 1)/(15 \times 1) - (8 \times 1)/(5 \times 1)]$$

By further calculation

$$= (32 + 24)/15 \div (32 - 24)/15$$

So we get

$$= 56/15 \div 8/15$$

$$= 56/15 \times 15/8$$

$$= 7$$

14. Seven equal pieces are made out of a rope of $21 \frac{5}{7}$ m. Find the length of each piece.

Solution:

It is given that

Length of 7 pieces of rope = $21 \frac{5}{7}$ m

It can be written as

$$= (21 \times 7 + 5) / 7$$

$$= 152/7$$

So the length of each piece = $152/7 \div 7$

We can write it as

$$= 152/7 \times 1/7$$

So we get

$$= 152/49$$

$$= 3 \frac{5}{49} \text{ m}$$

H.W.
Exercise 2 E Q.No.7

THANKING YOU
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