ODM EDUCATIONAL GROUP
Changing your Tomorrow

RATIONAL NUMBERS

PERIOD 3

SUBJECT : MATHEMATICS
CHAPTER NUMBER: 1
CHAPTER NAME : RATIONAL NUMBERS

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Learning outcome

- Students will be able to **know and write** the solutions and way of presenting the additional questions given to solve.

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Previous knowledge:

1. Write the additive inverse of zero.
2. What is the reciprocal of a negative rational number?
3. What is the additive inverse of -4/-5 ?

Problems related to properties of rational numbers

https://www.toppr.com/guides/maths/rational-numbers/introduction-to-rational-numbers/

https://www.toppr.com/ask/en-in/question/if-a-b-c-are-rational-numbers-then-associativity-of-rational-numbers-under-addition-is/

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verify commutative property of addition of rational numbers: -2 and 3/-5

Sol: To prove: $-2/1+-3/5=-3/5+-2/1$

LHS $=-2/1+-3/5$

$=-2\times5/1\times5+-3\times1/5\times1$ (∵LCM of 1 and 5=5)

$=-10-3/5=-13/5$

RHS $=-3/5+-2/1$

$=-3\times1/5\times1+-2\times5/1\times5$ (∵LCM of 1 and 5=5)

∴ RHS = LHS

i.e. $-2/1+-3/5=-3/5+-2/1$

Hence, the commutative property for the addition of rational numbers is verified.

For each set of rational numbers, given below, verify the associative property of addition of rational numbers: $-1,5/6$ and $-2/3$

Sol: To prove: $-1/1+(5/6+-2/3)=(-1/1+5/6)+-2/3$

LHS $=-1/1+(5/6+-2/3)$

$\therefore$LCM of 6 and 3 = 6

LHS $=-1/1+(5\times1/6\times1+-2\times2/3\times2)$

$=-1/1+1/6$

$=-1\times6/1\times6+1\times1/6\times1$ ($\because$LCM of 1 and 6=6)

$=-6+1/6=-5/6$

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RHS $=(-1/1+5/6)+-2/3$

$=(-1\times6/1\times6+5\times1/6\times1)+-2/3$ ($\because$ LCM of 1 and 6 = 6)

$=(-6+5/6)+-2/3=-1/6+-2/3$

$=-1\times1/6\times1+-2\times2/3\times2$ ($\because$LCM of 6 and 3=6)

$=-1-4/6=-5/6 \therefore$ RHS = LHS

i.e. $-1/1+(5/6+-2/3)=(-1/1+5/6)+-2/3$

Hence, the associative property for the addition of rational numbers is verified.

additive inverse (negative) of 0 = 0

additive inverse (negative) of -5 = 5

additive inverse (negative) of -3/-7 = 3/7

Home Assignment

Exercise 1(A) -Q no-3

THANKING YOU

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