Worksheet -14 Subject: - Mathematics Class: - VIII Teacher: - Ms. Nancy

Name: _____ Class & Sec: _____ Roll No. _____ Date: 19.05.2020

CH1 Test
RATIONAL NUMBERS

1. Represent $\frac{7}{4}$ on the number line.

2. Write five rational numbers greater than –2.

3. **State True or False**

   i. When we multiply a rational number with 1 we get same number.
   ii. A rational number is always a whole number.
   iii. All the whole numbers are rational numbers.
   iv. All the integers are rational numbers.

4. **Fill in the blanks**

   a. Zero has _____ reciprocal.
   b. The product of a rational no. and its inverse is _____.
   c. The numbers 5 and -5 are their own _____.
   d. The number _____ is not the reciprocal of any number.

5. **Match the columns**

Column A	**Column B**
i. The multiplicative inverse of $1\frac{7}{11}$	a. Not defined
ii. The reciprocal of -1	b. $-1\frac{7}{11}$
iii. The reciprocal of 0	c. -1
iv. Negative of $1\frac{7}{11}$	d. $\frac{11}{18}$

6. Represent $\frac{3}{4}$ on the number line.

7. Arrange in ascending order

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

8. Which is greater?

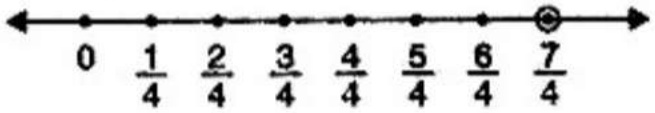
   a. $\frac{9}{-13}$ and $\frac{7}{-12}$

   b. $\frac{-8}{9}$ and $\frac{-9}{10}$

9. using appropriate properties find : $\frac{2}{5} \times \left(-\frac{3}{7}\right) - \frac{1}{6} \times \frac{3}{2} + \frac{1}{14} \times \frac{2}{5}$.

SOLUTIONS

1. $\frac{7}{4} = 1\frac{3}{4}$



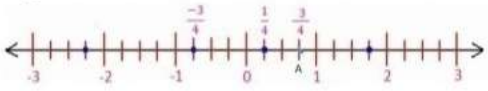
2. Five rational numbers greater than –2 are :
$\frac{-3}{2}, -1, \frac{-1}{2}, 0, \frac{1}{2}$

3. i. True
   ii. False , it is not necessary that every rational number is whole number.
   iii. True
   iv. True

4. a. ~~Zero~~ No
   b. One
   c. ~~Reciprocals~~ Negative
   d. Zero

5. a. - d
   b. - c
   c. - a
   d. - b

6. Divide the number line into 4 equal parts starting from $\frac{0}{4}, \frac{1}{4}, \ldots\ldots \frac{4}{4}$ on the right side of number line. Bold mark $\frac{3}{4}$ as asked in the question and mark it as any alphabet like A.



7. LCM of 5, 3, 4 and 6 is 60.
   So, $\frac{(12, 20, -15, 10)}{60}$
   Ascending order: $\frac{-45}{60}, \frac{10}{60}, \frac{12}{60}, \frac{20}{60}$

-45

8. a. $\frac{(9\times(-1)}{(-13\times(-1))} = \left(\frac{-9}{13}\right)$ and $\frac{(7\times(-1))}{(-12\times(-1))} = \left(\frac{-7}{12}\right)$

LCM of 13 and 12 is 156

$\frac{(-108,-91)}{156}$

$\frac{-108}{156} < \frac{-91}{156}$

Hence, $\frac{-7}{12}$ is greater

b. LCM of 9 and 10 is 90.

$\frac{(-80,-81)}{90}$

$\frac{-81}{90} < \frac{-80}{90}$

Hence, $\frac{-8}{9}$ is greater.

9. $\frac{2}{5} \times \left(-\frac{3}{7}\right) - \frac{1}{6} \times \frac{3}{2} + \frac{1}{4} \times \frac{2}{5}$

$= \frac{2}{5} \times \left(-\frac{3}{7}\right) - \frac{1}{6} \times \frac{3}{2} + \frac{2}{5} \times \frac{1}{14}$ .... [By commutativity]

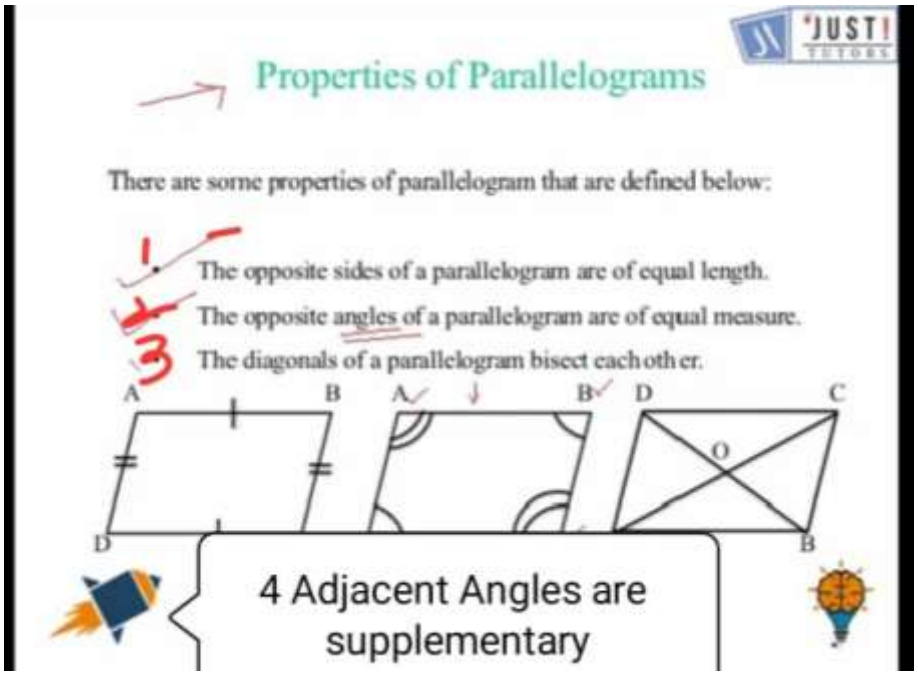
$= \frac{2}{5} \times \left(-\frac{3}{7}\right) + \frac{2}{5} \times \frac{1}{14} - \frac{1}{6} \times \frac{3}{2}$ .... [By associativity]

$= \frac{2}{5} \times \left\{\left(-\frac{3}{7}\right) + \frac{1}{14}\right\} - \frac{1}{6} \times \frac{3}{2}$ .... [By distributivity]

$= \frac{2}{5} \times \left\{\frac{(-6)+1}{14}\right\} - \frac{1}{6} \times \frac{3}{2}$

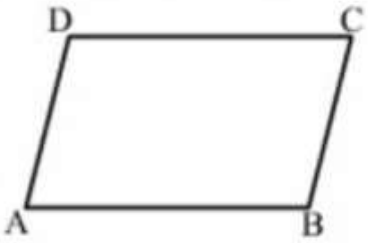
$= \frac{2}{5} \times \left\{\frac{-5}{14}\right\} - \frac{1}{6} \times \frac{3}{2} = \frac{-1}{7} - \frac{1}{4}$

$= \frac{-4-7}{28} = \frac{-11}{28}$



Elements of Parallelograms

There are four sides and four angles in a parallelogram. Some of these are equal. The following are some terms associated with these elements that we need to remember.



Here, we have a parallelogram ABCD.

AB and DC, AD and BC are pairs of opposite sides.

∠A and ∠C, ∠B and ∠D are pairs of opposite angles.

AB and BC are adjacent sides. (Find another pair of adjacent sides)

∠A and ∠B are adjacent angles. (Find another pair of adjacent angles)

These are the elements of a parallelogram.

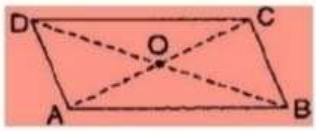
Chapter 3: Understanding Quadrilaterals

Class: VIII

Exercise 3.3

Question 1

Given a parallelogram ABCD. Complete each statement along with the definition or property used.



(i) AD = _____

(ii) ∠ DCB = _____

(iii) OC = _____

(iv) m∠ DAB + m∠ CDA = _____

Answer 1

(i) AD = BC [Since opposite sides of a parallelogram are equal]

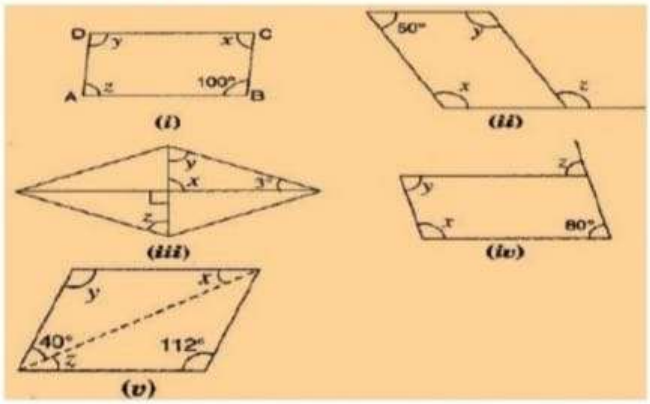
(ii) ∠ DCB = ∠ DAB [Since opposite angles of a parallelogram are equal]

(iii) OC = OA [Since diagonals of a parallelogram bisect each other]

(iv) m∠ DAB + m∠ CDA = 180° [Adjacent angles in a parallelogram are supplementary]

Question 2

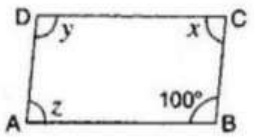
Consider the following parallelograms. Find the values of the unknowns x, y, z.



Note: For getting correct answer, read 3° = 30° in figure (iii)

Answer 2

(i) ∠ B + ∠ C = 180° [Adjacent angles in a parallelogram are supplementary]



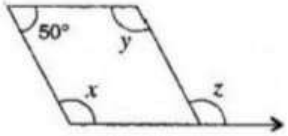
⇒ 100° + x = 180°

⇒ x = 180° − 100° = 80°

and z = x = 80° [Since opposite angles of a parallelogram are equal]

also y = 100° [Since opposite angles of a parallelogram are equal]

(ii) x + 50° = 180° [Adjacent angles in a parallelogram are supplementary]

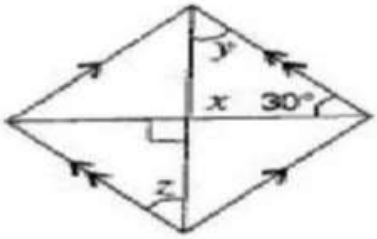


$\Rightarrow x = 180^\circ - 50^\circ = 130^\circ$

$\Rightarrow z = x = 130^\circ$ [Corresponding angles]

(iii) $x = 90^\circ$ [Vertically opposite angles]

$\Rightarrow y + x + 30^\circ = 180^\circ$ [Angle sum property of a triangle]



$\Rightarrow y + 90^\circ + 30^\circ = 180^\circ$

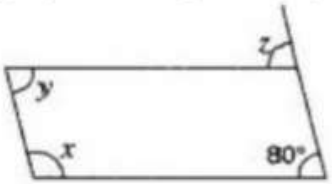
$\Rightarrow y + 120^\circ = 180^\circ$

$\Rightarrow y = 180^\circ - 120^\circ = 60^\circ$

$\Rightarrow z = y = 60^\circ$ [Alternate angles]

(iv) $z = 80^\circ$ [Corresponding angles]

$\Rightarrow x + 80^\circ = 180^\circ$ [Adjacent angles in a parallelogram are suppler

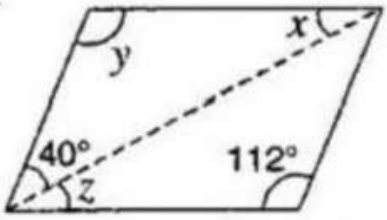


$\Rightarrow x = 180^\circ - 80^\circ = 100^\circ$

and $y = 80^\circ$ [Opposite angles are equal in a parallelogram]

(v) $y = 112^\circ$ [Opposite angles are equal in a parallelogram]

$\Rightarrow 40^\circ + y + x = 180^\circ$ [Angle sum property of a triangle]



$\Rightarrow 40^\circ + 112^\circ + x = 180^\circ$

$\Rightarrow 152^\circ + x = 180^\circ$

$\Rightarrow x = 180^\circ - 152^\circ = 28^\circ$

and $z = x = 28^\circ$ [Alternate angles]