NORTH EX PUBLIC SCHOOL (SESSION 2020-21)

CLASS VIII

SUBJECT : MATHEMATICS

CH 1 : RATIONAL NUMBER

Summary

1. The word rational numbers comes from the word "ratio". A rational number is a ration of two integers. A rational number is defined as a number that can be expressed I the form $\frac{P}{Q}$, where P and Q are integers and Q $\neq$ O. The set of rational numbers is denotes by Q.

2. Rational numbers are closed under addition, subtraction and multiplication but not under division.

3. Zero is called the identity for the addition of rational numbers.

4. 1 is multiplicative identity for rational numbers.

5. A rational number $\frac{P}{Q}$ is called the reciprocal or multiplicative inverse of another rational number $\frac{a}{b}$ if $\frac{a}{b}$ X $\frac{P}{Q}$ =1.

6. For every rational number $\frac{P}{Q}$, O $\div \frac{P}{Q}$ = 0

7. For every rational number $\frac{P}{Q}$, $\frac{P}{Q} \div$ 1 =$\frac{P}{Q}$.

8. Every rational number can be represented on the number line.

9. There are infinite number of rational numbers between any two given rational numbers.

10. A rational numbers between two rational numbers a and b is given by $\frac{(A+B)}{2}$.

CH 1   :   RATIONAL NUMBER

TOPIC   :   REVISION WORKSHEET

WORKSHEET   : 5

1.   Add the following   a) 4/9 + 1/3   b) 5/8 +7/32 + 3/16.

2.   Subtract the following a   5/23 – 3/46   b)   7/15 –4/25.

3.   Multiply   the   following a) 6/11 x 22/25. b) 5/3 x 21/5.

4.   Divide the following   a)   3/11   and 9/2   b)   3/4 and 2/3

5   Write absolute value of a)   -7/9   b)   4/5 -6/7.

6.   The sum of two rational number is 2/9. If one of them is
         1/3. Then find other number.

7.   Write the additive inverse of -6/11   and   14/-15.

8.   Multiply the sum of 6/7 and -13/21 by their difference.

 9.   Divide the sum of 85/91 and 5/13 by their difference.

10.   A covers a distance of 15 ¾ km in a day. How much
           distance will be covered in 5 1/7   days?

11.   In a factory 3/8 of the workers are female. If there are
          600 workers in all, then find the number of male workers.

12.   Radhika embroiders a saree in 5 ½ days .How much days
          will it for her to embroider four such saree.

13.   The product of two number is -18/75 if one of the   rational
          number is -9/20, then find the other rational number.

14.   A book has 350 pages. Neeta has read 5/7 of the book. Find
            the remaining number of pages to be read by Neeta.

15.   A train at a uniform speed covers a distance of 240 km in
          2 ½ hours. Find the speed of the train and also the
          distance travelled by the train in 6 hours.

16.   Find seven rational numbers between -7/9 and -1/3.

17.   Represent on number line.

          A) -2/5   b) 3 ¼   c) 5/7

CHAPTER 9
QUADRILATERALS

LINKS

1. https://youtu.be/6aebalPsMJc
2. https://youtu.be/zA2udP-6vCk
3. https://youtu.be/pQZYMz_N1Bk

SOLUTIONS FOR WORKSHEET 3

Solution

Page No.

Date

Class VIII

worksheet = 3

1. Diagonals $= \dfrac{n(n-3)}{2}$

Pentagon

$N = 5$ $\quad = \dfrac{5(5-3)}{2}$

$\quad = 5\left(\dfrac{2}{2}\right)$

$\quad = \dfrac{10}{2} = 5$

b) octagon $=$

$N = 8$

$\quad = \dfrac{8(8-3)}{2}$

$\quad = \dfrac{\overset{4}{\cancel{8}} \times 5}{\cancel{2}} = 20$ diagonals

(2) n sides

i) formula $= (n-2) \times 180°$

II) 7 sides $= (7-2) \times 180°$

$\quad = 5 \times 180°$

$\quad = 900°$

III) 10 sides $= (10-2) \times 180°$

$\quad = 8 \times 180°$

$\quad = 1080°$

exterior angle = 45°

sum = 360°

No of sides = $\frac{360}{45}$

= 8

Each interior angle = 108

No of sides = $(n-2) \times 180 = 108 \times n$

$180n - 360 = 108n$

$180n - 108n = 360$

$72n = 360$

$n = \frac{360}{72}$

$n = 5$

decagon = 10

sum

$(n-2) \times 180 = n \times$ interior angle

= $\frac{(10-2) \times 180}{10}$ = interior angle

= 8×18

= 144°

SOLUTION OF WORKSHEET 4

Worksheet - 4

1. Three angles are = 54°, 80° 180°
   let fourth angle being x

   $54 + 80 + 180 + x = 360$

   $314 + x = 360$

   $x = 360 - 314$

   $= 46°$

2. Four angles are =

   $2x, 3x, 5x, 8x$

   sum = 360

   A.T.Q

   $2x + 3x + 5x + 8x = 360°$

   $18x = 360°$

   $x = \dfrac{360°}{18}$

   $= 20°$

   Angles are $= 2x$

   $= 2 \times 20$

   $= 40°$

   $3x = 3 \times 20$

   $= 60°$

   $5x = 5 \times 20°$

   $= 100$

   $8x = 8 \times 20$

   $= 160°$

Two angles are 115, 45
let Equal angles be x

$$115 + 45 + x + x = 360$$
$$260 + 2x = 360$$
$$2x = 360 - 260$$
$$2x = 100$$
$$x = \frac{100}{2}$$
$$x = 50$$

Two adjacent angles are
$2x, 3x$

$$2x + 3x = 180 \quad \text{sum of adjacent}$$
$$5x = 180 \quad \text{angle}$$
$$x = \frac{180}{5}$$
$$x = 36$$

Angles = $2x \qquad 3x$
= $2 \times 36 \quad 3 \times 36$
= $72 \qquad 108$

The sum of opposite angle = 130
A of pgm.
$\angle A$ and $\angle C$ are
opp. $\angle s$
$$\angle A + \angle C = 130$$
$$\angle A + \angle A = 130$$
$$2 \angle A = 130$$
$$\angle A = 130/2$$

$\underline{\angle A} = 65°$

$\angle A + \angle B = 180°$ Sum of adjacent $\angle s$

$65 + \angle B = 180°$

$\angle B = 180 - 65$
$= 115°$

$\angle D = \angle B = 115°$

6) one angle of 11^{gm} 75°

$\underline{\angle A} = \angle C = 75°$

$\angle A + \angle B + \angle C + \angle D = 360°$ sum

$75 + \angle B + 75 + \angle B = 360°$ of $\angle s$ of 11^{gm}

$150 + 2\angle B = 360°$

$\therefore [\angle B = \angle D]$

$2\angle B = 360° - 150°$

$\angle B = \dfrac{210}{2}$

75

$\angle B = 105°$ A   B

$\angle D = \angle B = 105°$

⑦ Two angles are $= 80°, 100°$

$\angle A = \angle C = 80°$
$\angle B = \angle D = 100°$ } opp $\angle s$ of 11^{gm}

80   100

D   B
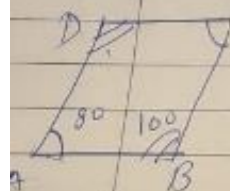
6) The sides of rectangle are
$= 5x, 4x$

Perimeter(P) = 90 cm

P of rectangle $= 2(l+b)$

$2(l+b) = 90$

$2(5x + 4x) = 90$

$2 \times 9x = 90$

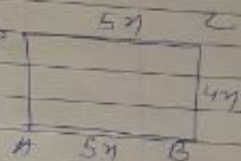$18x = 90$

$x = \dfrac{90}{18}$

$x = 5$

Sides are $= 5x = 5 \times 5$

$= 25 \text{ cm}$

$4x = 4 \times 5$

$= 20 \text{ cm}$

7) Three acute angle are
75°, 75°, 75°

Let fourth angle be $= x$

$75° + 75° + 75° + x = 360$ Sum of int
$225 + x = 360°$ ∠ of quad
$x = 360 - 225$
$= 135°$
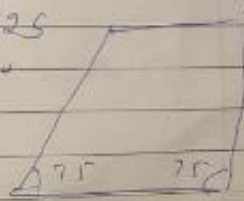
10. Three angles of quad. be-x
Fourth angle = 120

$x + x + x + 120 = 360$ (ASP of quad)
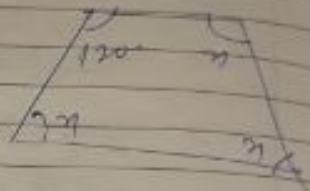
$3x + 120 = 360$

$3x = 360 - 120$

$3x = 240$

$x = \dfrac{240}{3}$

$x = 80$

11. Two adjacent angles of 11gm
= $(3x-4)(3x+16)$

Two $3x - 4 + 3x + 16 = 180°$ sum of
adjacent ∠s

$6x + 12 = 180$

$6x = 180 - 12$

$6x = 168$

$x = \dfrac{168}{6}$

$= 28°$

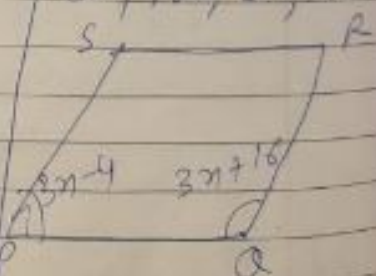$3x - 4 = 3 \times 28 - 4$

$\quad = 84 - 4$

$\quad = 80$

$3x + 16 = 3 \times 28 + 16$

$\quad = 84 + 16$

$\quad 160$

opp. ∠s of
11gm are
Equal

80°, 100°, 80°, 100°

Let one angle be = x

other angle = $2x$ / 3

$$\frac{x + 2x}{3} = 180$$

$$\frac{3x + 2x}{3} = 3 \times 180$$

$$5x = 540$$

$$x = \frac{540}{5}$$

$$x = 108$$

$$\frac{2 \times 108^{36}}{3} = 72°$$

opp. $\angle$ d

$+ 3x$ are equal

$\angle A = \angle C = 108$

$\angle B = \angle D = 72°$

72, 108, 72, 108

smallest angle = 72°
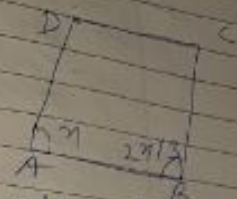
In a square
all sides are equal

$3x - 5$

$A \quad 2x+3 \quad B$

$AB = BC$

$2x + 3 = 3x - 5$

$2x - 3x = -5 - 3$

$-x = -8$

$x = 8$
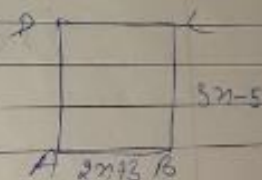
$$a = (40°)$$

14. No. of sides $= \dfrac{360}{40} = 9$ sides

b) $= 120°$

$n = \dfrac{360}{120}^{3} = 3$ sides

c) $60°$

$n = \dfrac{360}{60}^{6} = 6$ sides.

15. $60°$

$(n-2) \times 180 = 60 \times n$

$180n - 360 = 60n$

$180n - 60n = 360$

$120n = 360$

$n = \dfrac{360}{120}^{3}$

$n = 3.$

b) $160°$

$(n-2) \times 180 = 160 \times n$

$180n - 360 = 160n$

$180n - 160n = 360$

$20n = 360$

$n = \dfrac{360}{20}$

$n = 18°$

CROSSWORD PUZZLE

Cross word Puzzle

Down

1. Rhombus
2. Kite
5. Polygon

Across

3. Convex
4. Rectangle
6. Region
7. Diagonal
8. Pentagon