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Subject – Mathematics

CLASS – VIII

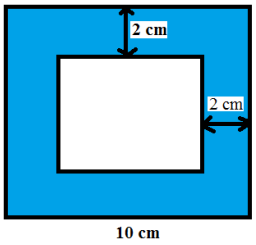
1 Find the angle which a diagonal makes with a side of a square.

2 ABCD is a rectangle whose diagonals AC and BD intersect at O. If $\angle CAB = 40^0$, then find $\angle CBD$.

3 The lengths of diagonals of a rhombus are 24cm and 18cm respectively. Then find the length of each side of the rhombus.

4 The perimeter of a parallelogram is 32cm. The shorter side is 6.5cm, then find the measure of the longest side.

5 Find the area and perimeter of the shaded region between the two squares.



6 The angles of a quadrilateral are in the ratio of 1:2:3:4. Find the smallest angle.

7 If the area of a square is 256sq.m, then find the length of its diagonal.

8 In a square ABCD, $AC = 2x + 3$ & $BD = \frac{7x}{3} - 14$, then find the value of x.

9 Which quadrilateral is not a parallelogram but has exactly 2 opposite angles of equal measures?

10 If the sum of the interior angles of a polygon is 900^0, then find the number of sides in the polygon.

11 PQRS is a quadrilateral in which $PS \parallel QR, \angle P = 110^0$ & $\angle S = 130^0$, then find the measurement of the other two angles.

12 For $x = -\frac{3}{5}$ and $y = \frac{6}{7}$, insert a rational number between
$(x + y)^{-1}$&$x^{-1} + y^{-1}$(b) $(x - y)^{-1}$&$x^{-1} - y^{-1}$

13 Rearrange suitably and find the sum: $-\frac{6}{5} + \frac{7}{21} + \left(-\frac{7}{3}\right) + \left(-\frac{8}{10}\right)$.

14 Divide the sum of $-\frac{12}{7}$ & $\frac{13}{5}$ by the product of $-\frac{1}{2}$ & $\frac{31}{7}$.

15 Show that $a \div (b \div c) \neq (a \div b) \div c$, for $a = \frac{3}{2}, b = -\frac{7}{6}$ & $c = 5$.

16 Find the three rational numbers between $-\frac{2}{3}$ and $-\frac{1}{3}$.

17 Represent (a) $-\frac{2}{5} \div -\frac{2}{3}$ and (b) $\left\{\frac{1}{2} \times \left(-\frac{3}{5}\right)\right\} + \frac{7}{10}$ on a number line.

18 The absolute value of a rational number is the number with no regard to its sign,
e. g. Absolute value of $-\frac{2}{3} = \left|-\frac{2}{3}\right| = \frac{2}{3}$.
If $a = \frac{2}{-5}$ & $b = \frac{3}{4}$, verify that:
(a) $|a + b| < |a| + |b|$(b) $|a \times b| = |a| \times |b|$.

19 Using the appropriate properties find :$-\frac{2}{5} \times \frac{3}{5} + \frac{5}{2} - \frac{3}{5} \times \frac{1}{6}$.

20 Arrange the following rational numbers in descending order :

a) $-\frac{4}{7}, -\frac{9}{14}, \frac{13}{-28}, -\frac{23}{42}$

b) $-\frac{3}{4}, \frac{5}{-12}, -\frac{7}{16}, \frac{9}{-24}$

$$\frac{4}{5}, -\frac{2}{3}, -\frac{1}{2}, -\frac{4}{7}$$

21 Area of a square is 4 sq.m more than $\frac{2}{3}$of the area of a rectangle. If the area of square is 64 sq.m , then find the dimensions of rectangle, given that breadth is $\frac{2}{5}$ of length .

22 What should be subtracted from the sum of $\frac{7}{8}$ & $\frac{4}{15}$ to get $\frac{9}{40}$?

23 Is $4 \div 2 = 2 \div 4$? What does it show?

24 What should be added to $\left(\frac{1}{2} + \frac{1}{3} - \frac{1}{5}\right)$ to get 3 ?

25 What should be subtracted from $2x - 4y + 7$ to get $3x - 7y - 12$.

26 The ratio of income to expenditure of Mr. Potter is 7:3. If the savings made by him is Rs.15,000 per month throughout the year, then find his annual income.

27 Due to inflation, the price of sugar is increased by 20%. Find the decrease in percentage of consumption of sugar by a family, if the family wants to keep the expenditure on sugar unchanged.

28 What interest will Mrs. Radhika get on sum of Rs.80000 at the end of 18 months at the rate of 20% simple interestp.a.?

29 A man sells two mobile phones at the same price. On one, he makes a profit of 10% and on the other; he incurs a loss of 10%. Find this gain or loss percent on the whole transaction.

30 Find the median of the data 24, 21, 27, 26, 28, 34, 35, 20, 38, 40.