

**CLASS –VIII  
MATHEMATICS**

- 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  $\angle CAB = 40^\circ$ , 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 Construct a trapezium ABCD, in which  $AB \parallel CD$ ,  $AB = 7.5$  cm,  $BC = 3.6$  cm,  $CD = 4$  cm and  $\angle B = 60^\circ$ .
- 5 Simplify :  $\frac{1}{1+a^{n-m}} + \frac{1}{1+a^{m-n}}$
- 6 The angles of a quadrilateral are in the ratio of 1:2:3:4. Find the smallest angle.
- 7 Construct a parallelogram whose diagonals are 5.4cm and 6.4cm and angle between them is  $70^\circ$ .
- 8 In a square ABCD,  $AC = 2x + 3$  &  $BD = \frac{7x}{3} - 14$ , then find the value of  $x$ .
- 9 Construct a square ABCD in which  $AC = 7$ cm.
- 10 In a quadrilateral ABCD the bisectors of  $\angle A$  and  $\angle B$  meet in point P. If  $\angle C = 100^\circ$  and  $\angle D = 60^\circ$ , find the measures of  $\angle APB$ .
- 11 PQRS is a quadrilateral in which  $PS \parallel QR$ ,  $\angle P = 110^\circ$  &  $\angle S = 130^\circ$ , 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 The light from a laser beam travels at a speed of  $3 \times 10^8$  m/s. How far does it travel in 2 nano seconds, which is  $2 \times 10^{-9}$  seconds?
- 16 Find the value of n if  $0.7n = \frac{0.56 \times 0.56 - 0.21 \times 0.21}{(0.56 + 0.21)}$
- 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 perimeter of an isosceles triangle is  $10\frac{3}{4}$  cm. If one of its equal side is  $2\frac{5}{6}$  cm, find the third side.
- 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)  $-\frac{3}{4}, \frac{5}{-12}, -\frac{7}{16}, \frac{9}{-24}$
- c)  $\frac{4}{5}, -\frac{2}{3}, -\frac{1}{2}, -\frac{4}{7}$
- 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 An oil drilling rig in the gulf stands so that one-fifth of it is in sand, 20 feet of it is in water and two-third of it is in the air, What is the total height of the rig?
- 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 Solve for  $x$  :  $\frac{x+\frac{1}{x}}{x-\frac{1}{x}} = 3$
- 27 Find the value of  $\sqrt{105.0625}$ . Hence, write down the square root of the following:  
(i) 1.050625                      (ii) 10506.25
- 28 If  $\sqrt[3]{x} - 2 = 3$ , find  $x$
- 29 Three numbers are in the ratio 2:3:4. The sum of their cubes is 72171. Find the numbers.
- 30 If  $\sqrt{0.99 \times 0.9 \times x} = 0.9 \times 0.09 \times \sqrt{y}$ , then find  $\frac{x}{y}$