

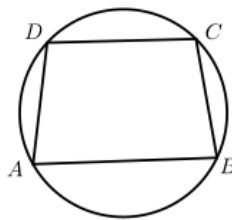
Question Paper - MATHS

1 Mark Questions

- (1)
Write the sequence of natural numbers
- (2)
Write the sequence starting from 1 and $\frac{1}{2}$ is added subsequently
- (3)
The sides of a triangle are in the ratio of $1:\sqrt{3}:2$. What are the angles ?
- (4)
How many two digits perfect squares are there

2 Mark Questions

- (6)
Write the sequence of the perimeters of the equilateral triangles having sides 1cm, 2cm, 3cm...
Write the sequence of area
Write the sequence of angle sums
- (7)
In the figure $ABCD$ is a trapezium. If the vertices are on a circle, prove that it is an isosceles trapezium



- (8)
If $A(2, -1)$, $B(3, 4)$, $C(-2, 3)$ are the vertices of a triangle find the fourth vertex
- (9)
Write the product $(x - 1) \times (x + 1)$
- (10)
The solutions of the equation $x^2 - 2x - 24 = 0$ are 6 and -4 . If $P(x) = x^2 - 2x - 24$ then find $P(-4)$. Write the factors of $P(x)$

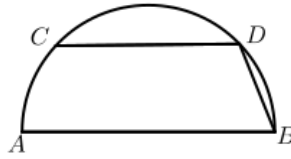
3 Mark Questions

- (11)
Write the sequence of the squares of all odd numbers. What is its algebra?
- (12)

Write algebra of the sum of the sequence $6n + 5$. Can the sum 2000? Why?

(13)

In the figure AB is the diameter and CD is parallel to the diameter. $AB = 8\text{cm}$, $BD = 2\text{cm}$, find CD



(14)

One angle of a triangle is 30° , prove that radius of the circumcircle is equal to the side opposite to 30°

(15)

The central angle of a sector is 90° , radius 16cm, calculate slant height and radius

(16)

In triangle ABC , $A(-3, 4)$, $B(6, 4)$, $C(3, 12)$.

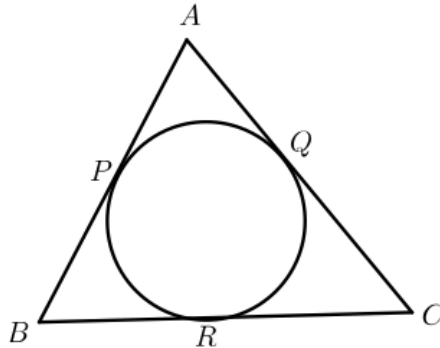
★ Find BC

Find ★ Find the altitude from C to AB

★ Calculate the area of triangle 3

(17)

O is the incenter of triangle ABC . The incircle touches the sides at P, Q, R . $\angle POQ = 110^\circ$, $\angle C = 60^\circ$. Find $\angle B, \angle POR$.



(18)

A chord of a circle divides it into two parts. Then,

- If all angles on one part, three times the angles on the other, calculate the angles.

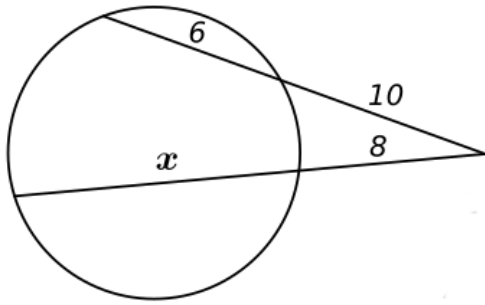
(19)

In quadrilateral $ABCD$, $\angle A = x^\circ$, $\angle B = 2x^\circ$, $\angle C = 4x^\circ$, $\angle D = 3x^\circ$.

- Find the value of x
- Prove that quadrilateral $ABCD$ is cyclic.

(20)

Find the value of x



4 Mark Questions

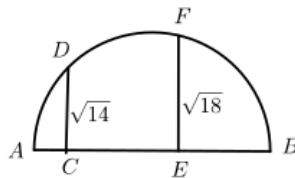
(21)

Prove that sum of some terms from the beginning of the sequence in the order 56, 88, 120 \dots can never be a perfect square. What should be added to the sum makes it a perfect square

(22)

(23)

In the figure given below AB is the diameter, CD, EF are perpendicular to the diameter. Find the length of AB as an integer



(24)

Radius of a cone is 10cm, volume 3140 cubic centimeter. Calculate total surface area

(25)

The length of a rectangle is 2 more than its width. Area of the rectangle is 80. Find length and breadth

(26)

Two boxes contains tokens on which numbers 1, 2, 3, 4 are written One token is taken from each box. What is the probability of getting sum of the face numbers a prime number

(27)

The perimeter of a rectangle is 40 metres. What is the sum of its length and breadth? If the area of the rectangle is 84 square metres, what are the lengths of its sides?

(28)

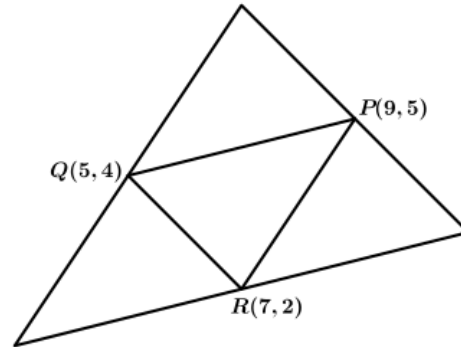
The difference between 6 times a number and the square of the number is 8. What is the number?

(29)

$(5, 3)$ is point on a line parallel to x -axis. What are the coordinates of the points at which it cuts the y - axis? What is the distance between these two points? What is the distance between this line and the x - axis?

(30)

In this picture, the mid points of the sides of the larger triangle are joined to make the smaller triangle PQR . Calculate the coordinates of the vertices of the larger triangle.



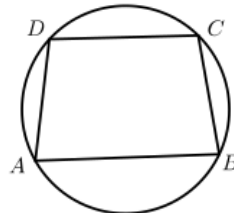
5 Mark Questions

(31)

Find the sum of first 20 natural numbers. How much more the sum of first 40 natural numbers that this ?

(32)

in the figure $ABCD$ is a trapezium. If the vertices are on a circle ,prove that it is an isocles trapezium



★ Draw figure

★What is $\angle A + \angle C$?

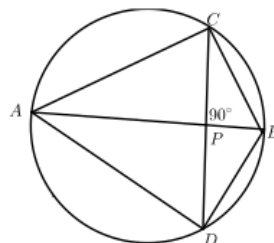
★What is $\angle B + \angle C$?

★ Write the relation between $\angle A, \angle B$

★Write the conclusion

(33)

AB is the diameter of a circle, $PA = 9$, $\angle PAC = 30^\circ$ find the radius of the circle, Find the sides of $ABCD$



(34)

The radius of a cone and a sphere are equal. If the height of the cone is four times radius, what is the ratio of their volumes.

(35)

Serena and Johan had 45 diamond stones. They sold 5 stones. The product of the remaining stones is 124. Find the number of stones each had

(36)

Draw the axes and mark the points $(0, 0)$, $(4, 0)$, $(7, 6)$, $(3, 6)$. Join these points in an order. Suggest a suitable name for this quadrilateral. Prove that the diagonals are perpendicular.

(37)

Draw a circle and mark a point A on the circle. Draw the tangent to A and mark the point P such that $PA = 6$. Draw a square with side PA . Construct a rectangle with one side 8 and area equal to area of the square.

(38)

To complete a job Rasheed takes 5 more hours than Gopal. When both of them did the job together, it was completed in 6 hours.

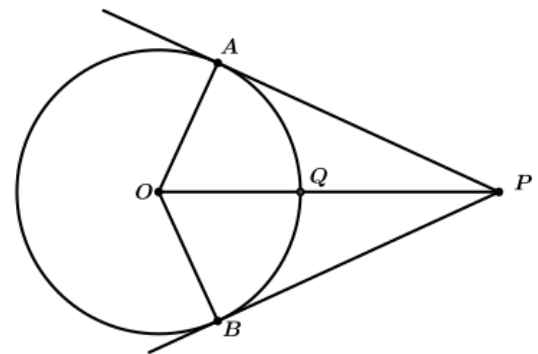
- If Gopal takes x hours for completing the job alone, what about the time for Rasheed ?
- How much work would be done by Gopal in 1 hour ? What about Rasheed ?
- How much work would be done by them together in 1 hour ?
- How many hours would each of them needed to do the job alone ?

(39)

Draw a circle of radius 4 centimetres and draw a square with all sides touching the circle.

(40)

In the figure P is 37 centimetres away from the centre of the circle. If $PQ = 25\text{cm}$, then



- What is the radius of the circle?
- What are the lengths of the tangents PA and PB ?
- What is the length of the tangent from a point 20 cm away from the centre of the circle?

(41)

Calculate the median.

Monthly income	10000	9000	7000	12000	11000	13000	8000
No. of families	13	11	3	4	7	2	5

(42)

A box contains 5 black beads and 7 white beads. If one bead is taken,

- What is the probability of getting a black bead? What is the probability of drawing a white bead?
- In another box there are 4 black beads and 6 white beads. If one bead is taken,
- What is the probability of getting a black bead? What is the probability of getting a white bead?
- From which box is it more probable to draw a black bead?
- From which box is it more probable to draw a white bead?

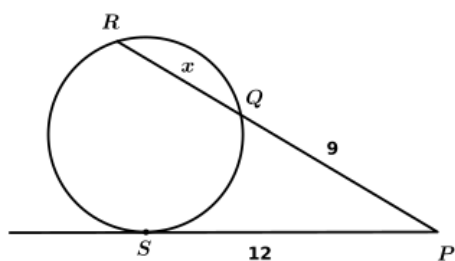
(43)

There are 12 beads in a box, some white and some black. The probability of drawing a white bead from it is $\frac{1}{3}$

- How many white beads are there in the box? How many black?
- If we take away 2 black beads from the box, what is the probability of drawing a white bead?
- Is the the probability of drawing a black bead increases?

(44)

Calculate the values of x in the following figure



(45)

Daily wages and number of workers working in a company are listed.

Calculate the median daily wage.

Daily wages(Rs)	Number of workers
250	2
300	3
350	6
400	9
450	8
500	7
550	5