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:√3:2 . What are the angles ?

(4)

How many odd numbers are there below 25

(5)

2 Mark Questions

(6)

Write the terms of the sequence $5\times(1+6), 10\times(2+6), 15\times(3+6), 20\times(4+6)\cdots$ in the form : first term $5\times1(1+6)$, second term $5\times2(2+6)$.Write its algebra

(7)

In triangle ABC, $AB = AC$.angle $BAC = 30°, BC = 5$cm Find the radius of ABC

(8)

If $A(4,5), B(7,6), C(4,3)$are the three vertices of a parallelogram $ABCD$ write the coordinates of the fourth vertex

(9)

Find the slope of the line passing through $(1,-3), (3,-5)$

(10)

Find a second degree polinomial $p(x)$ such that $p(1) = 0$ and $p(3) = 0$

3 Mark Questions

(11)

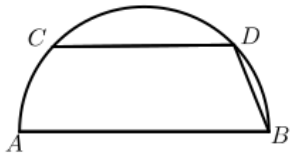
The algebra of an arithmetic sequence is $3n - 2$. Write the sequence. Is 99 a term of this sequence

(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. $AB = 8\text{cm}$, $BD = 2\text{cm}$,findCD



(14)

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

(15)

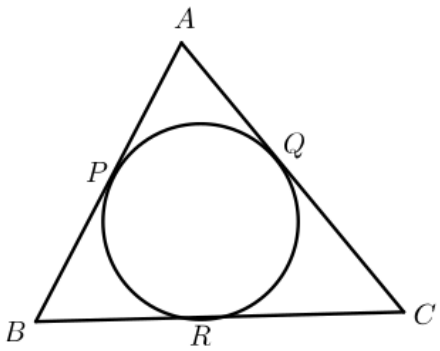
A sector is folded in such a way as to get a cone. Radius of the sector is 12cm , central angle $120°$.Calculate radius and slant height

(16)

Radius of a cone is 4cm , slant height is $\frac{5}{2}$times radius . Calculate the radius and central angle of the sector

(17)

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



(18)

Find the length of the tangent to a circle with radius 7 centimetres, from a point 25 centimetres away from the centre?

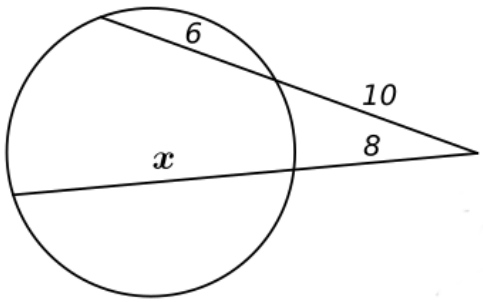
(19)

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

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

(20)

Find the value of x



4 Mark Questions

(21)

Find the sum of n terms of the sequence $6, 10, 14 \cdots$? How many terms of this sequence from the beginning in an order makes the sum 240. Can the sum of first few terms in an order makes the sum 250? Why?

(22)

In triangle $ABCAB = 8\text{cm}$, $BC = 6\text{cm}$, $AC = 10\text{cm}$.

$\star$What kind of triangle is this?

$\star$ What is the position of B based on the circle with ACas the diameter?Why?

$\star$ What is the position of A based on the circle with BC as the diameter? Why?

$\star$ What is the position of the point C based on the circle with diameter AB ?

(23)

A boy viewed the top of a tree at an angle of elevation $30°$. He moved 10 m towards the tree and saw the top of the tree ant the angle $60°$ Find the height of the tree

(24)

The sides of $ABCD$are parallel to the coordinate axes and $A(3, 7), C(7, 9)$ are the opposite vertices . Write the coordinates of B and$D$

Find the lengths of AB and BC

Calculate the area of the rectangle $ABCD$

(25)

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

(26)

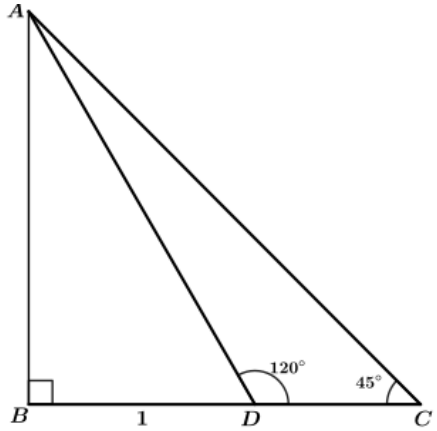
The sum of the first 30 terms of an arithmetic sequence is 90 more than the sum of the first 29 terms. Its 20 th term is 60. Calculate 30th term. Can the difference between any two terms 2017.

(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)

In the figure, how much is $\angle BAD$? Calculate the lengths AD, DC and AC.
What is the ratio of the sides of a triangle with angle measures $15\,^\circ$, $45\,^\circ$, $120\,^\circ$?

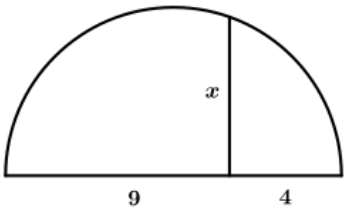


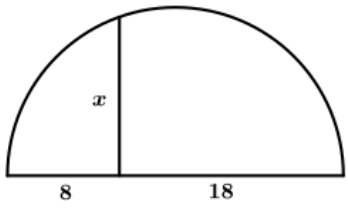
(29)

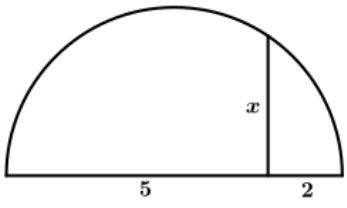
$(5, 3)$ is point on a line parallel to x-axis. What are the coordinates of the points at which it cuts the $y - axis$? What is the distance between these two points? What is the distance between this line and the $x - axis$?

(30)

Find the length of the perpendicular to the diameter in each semicircles given.







5 Mark Questions

(31)

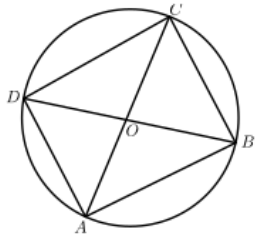
Find the sum of first 20 natural numbers. How much more the sum of first 40 natural numbers that this ?

(32)

Two terms of an arithmetic sequence having natural number terms are 50and 85. Also, 60 is not a term of this sequence. Is 134 a term of this sequence? Justify your opinion [5]

(33)

in the figure O is the center of the circle , $OC = 5, \angle BOC = 60°$. Calculate the area of triangle BOC . Also find the area of triangle OCD?.Calculate the area of $ABCD$?



(34)

If $A(1,3), B(3,6), C(5,9)$then
$\star$ Find AB, BC, AC
$\star$ Check whether A, B, C are the ponts on a line or not
$\star$if $BC = CD, BC + CD = BD$then find the coordinates of B
$\star$ Find the point $10\sqrt{13}$cm away from A on AB.

(35)

The sum of a number and its reciprocal is $\frac{5}{2}$. Find the number

(36)

The members of a football team is arranged according to their height. Calculate median

ഉയരം സെ.മീറ്റർ	കുട്ടികളുടെ എണ്ണം
120-126	2
126-132	3
132-138	6
138-144	3
144-150	1

(37)

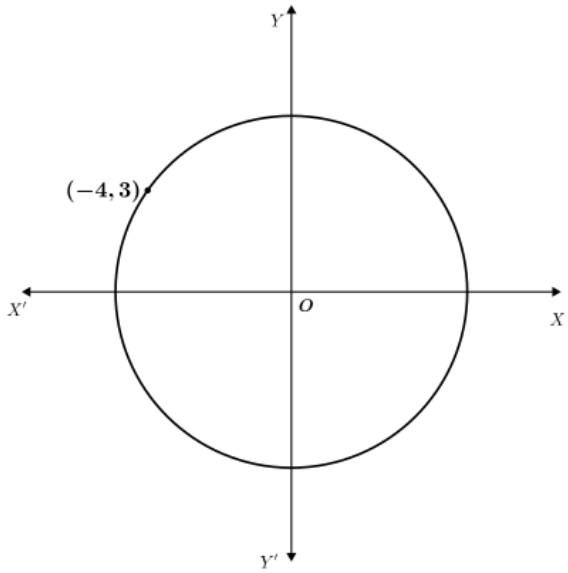
The radius of a circle is 15cm. P is a point on the chordAB. The lengths of AP and PB are counting numbers. $PA \times PB = 34$, CD is another chord passing through P.
What is $PA \times PB$
If $PC = 10$, find PD
Can PC, PDbe counting numbers ? Why?

(38)

Draw an equilateral triangle with side $\sqrt{10}centimetres$.

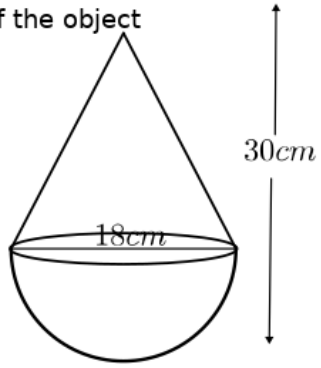
(39)

In the figure the centre of the circle is origin. Find its radius. What are the coordinates of the points at which it cuts the $axes$? Also find the coordinates of another two points on the circle.



(40)

Find the volume of the object



(41)

Calculate the median.

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

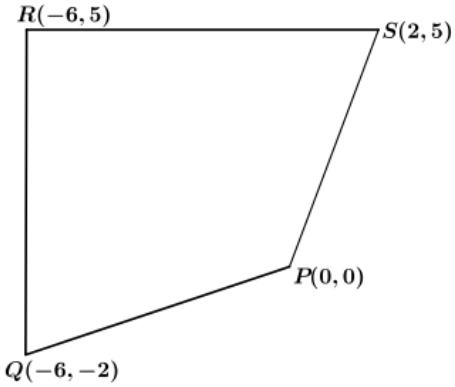
(42)

In a box there are 6 blue balls and 4 yellow balls and in another box, there are 2 blue balls and 8 yellow balls. If one ball is taken from each box,

- In how many different ways can we take two balls, one from each box ?
- How many pairs are possible with both blue ?
- what is the probability of both being blue ?
- How many pairs are possible with both yellow ?
- what is the probability of both being yellow ?

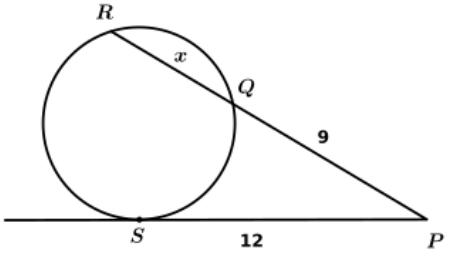
(43)

Find the perimeter of the given quadrilateral

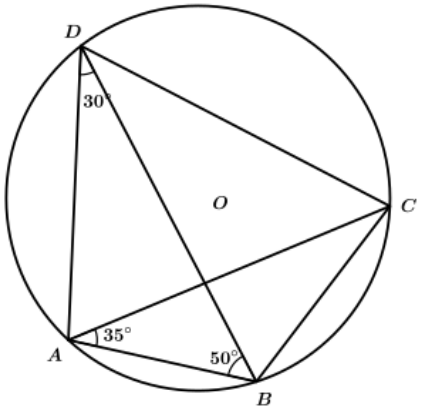


(44)

Calculate the values of x in the following figure



19. Find the measurements of given angles in each figures.



$\angle ACB =$
$\angle ACD =$
$\angle BDC =$
$\angle ADC =$
$\angle ABC =$