Question Paper - MATHS

1 Mark Questions

(1)

Write the sequence of odd numbers

(2)

In triangle $ABC AB = 8\text{cm}$, $BC = 6\text{cm}$, $AC = 10\text{cm}$.
$\star$What kind of triangle is this?

(3)

The sides of a triangle are in the ratio of $1:1:\sqrt{2}$, What are the angles ?

(4)

How many odd numbers are there below 25

(5)

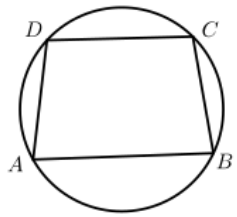
2 Mark Questions

(6)

Write the sequence of the perimeters of the equilateral triangles having sides 1cm , 2cm, 3cm$\cdots$.
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 isoceles trapezium



(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)

one end of the diameter of a circle is $(1,4)$. The center of the circle is $(3,-4)$. Find the coordinates of other end

(10)

The solutions of the equation $x^2-2x-24=0$are6and -4. If $P(x)=x^2-2x-24$ then find $P(-4)$. Write the factors of $P(x)$

3 Mark Questions

(11)

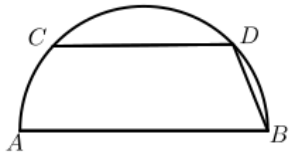
The algebra of an arithmetic sequence is $3n-2$. Write the sequence. Is 99 a term of this sequence

(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)

In triangle ABC, $AC = BC, OA = 5, \angle AOB = 160°$then find$AB, AC, BC$

(15)

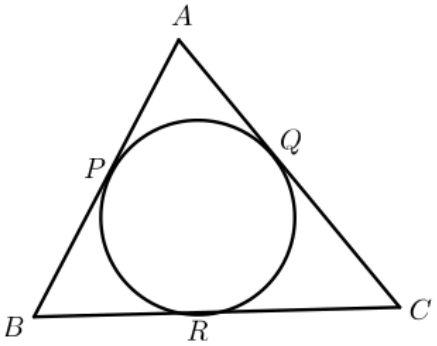
The central angle of a sector is 90°,radius 16cm , calculate slant heigt and radius

(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)

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

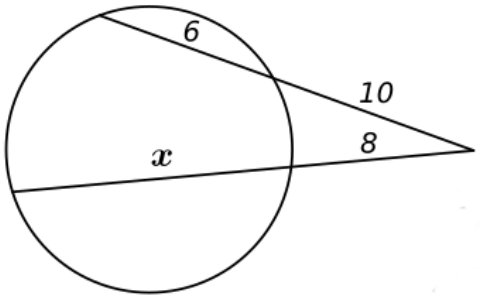
- If all angles on one part, three times the angles on the other, calculate the angles.

(19)

A sector of central angle 216 ° is cut out from a circle of radius $25cm$ and it is rolled up into a cone. What is its volume?

(20)

Find the value of x



4 Mark Questions

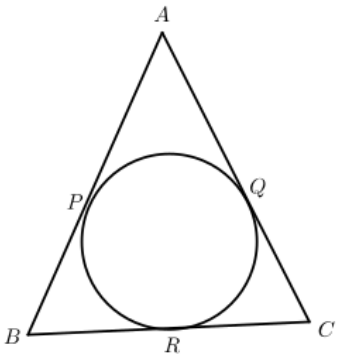
(21)

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

(22)

(23)

In the figure a circle touches the sides of $\triangle ABC$at P, Q, R. If $AB = AC$ then prove that $BR = CR$



(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 area of a right angled triangle is 60square unit. The one of the perpendicular sides is 10more than other . Find the sides of the triangle

(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.

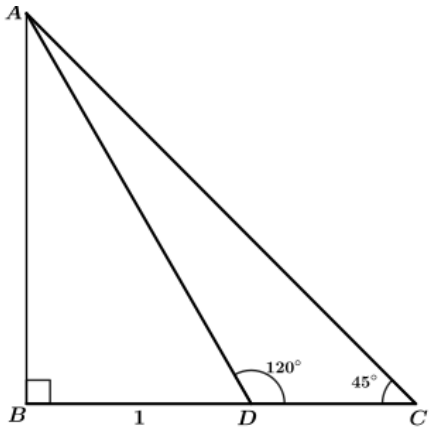
(27)

Find the mean and median

10,14,9,8,12,16,15

(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 °, 45 °, 120 °?

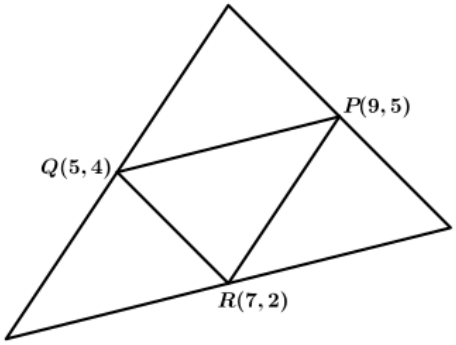


(29)

$(5, 3)$ 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.



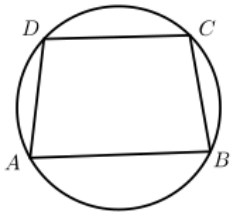
5 Mark Questions

(31)

The common difference of an arithmetic sequence is a prime above 2. The difference between two terms is 224. Can 2017 be the difference between any two terms of this sequence

(32)

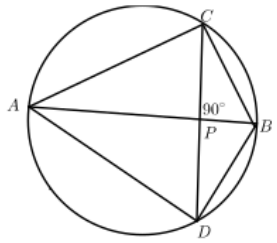
in the figure $ABCD$is a trapezium. If the vertices are on a circle ,prove that it is an isoceles trapezium



⋆ 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, $PA = 9, \angle PAC = 30°$ find the radius of the circle, Find the sides of $ABCD$



(34)

If$A(1, 3), B(3, 6), C(5, 9)$then
⋆ Find AB, BC, AC
⋆ Check whether A, B, C are the ponts on a line or not
⋆if $BC = CD, BC + CD = BD$then find the coordinates of B
⋆ 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)

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)

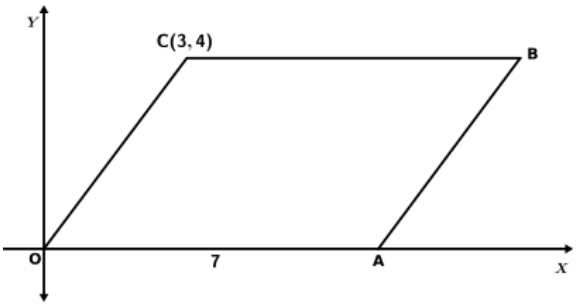
Draw a circle and mark a point A on the circle.Draw the tangent to A and mark the point P such that $PA = 6$. Draw a square with side PA. Construct a rectangle with one side 8 and area equal to area of the square.

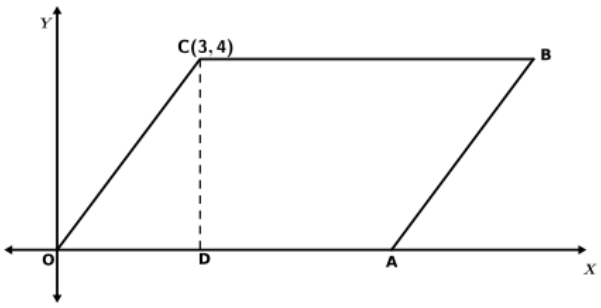
(38)

Can $(3, 4), (5, 16), (7, 24)$ be the vertices of a triangle?Why?
If (x, y) is a point on the line joining first two points then prove that $(x + 1, y + 1)$ is a point on the same line [4]

(39)

In the figure, $OABC$ is a parallelogram.



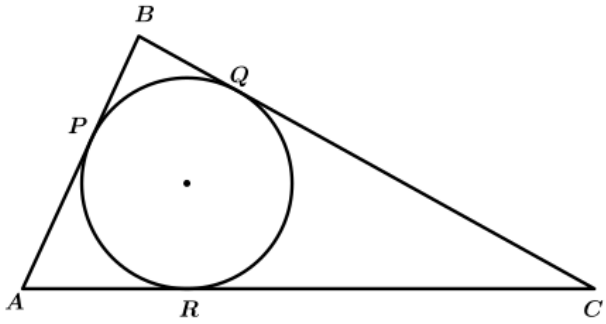


- What are the coordinates of A ?
- What is the relation between the y-coordinate of B and y-coordinate of C ?
- What is the length of BC ? Find the coordinates of B.
- If CD is perpenticular to X-axis, find the lengths of OD and CD.
- Find the length of OC

(40)

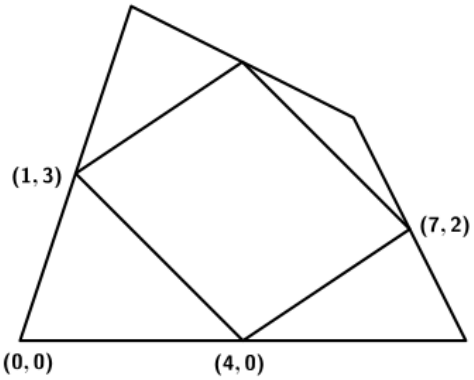
Draw a quadrilateral with any sides. Draw a circle touching any three sides.

In the figure, the incircle of $\triangle ABC$, touches the sides at P, Q and R. If $AB = 10cm, BC = 12cm, AC = 16cm$, find half the perimeter of the triangle.
What is the relation between half the perimeter and the lengths BC and AP?
Find AP, BQ and CR



(41)

In this picture, the mid points of the sides of the larger quadrilateral are joined to make the smaller quadrilateral.
Calculate the coordinates of other vertices of the quadrilaterals.
Calculate the lengths of the sides of the smaller quadrilateral.
What is the speciality of this quadrilateral?



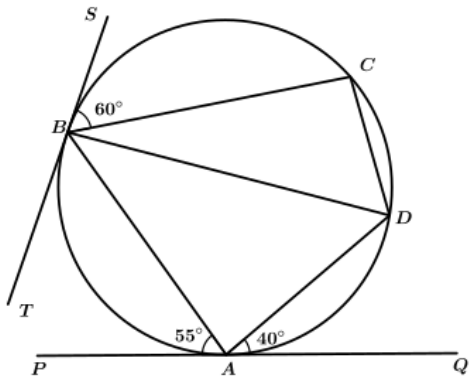
(42)

Howmany two digt numbers are there ?

- Howmany pairs are possible with both the digits are same ?
- If one says a two digit number, what is the probability of two digits being the same?
- Out of these, howmany of them are odd ? Howmany of them are even ?
- What is the probability of an odd number ?
- What is the probability of an even number ?

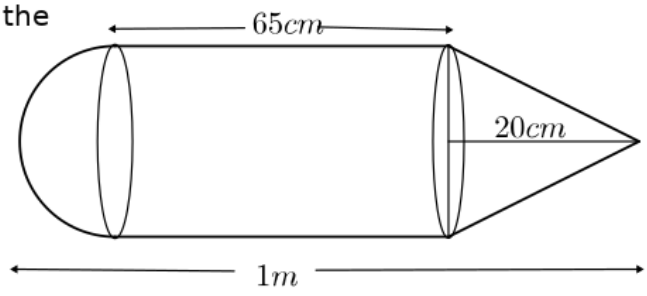
(43)

In the figure, PQ, ST are tangents. Find the angles of quadrilateral.



(44)

Find the total surface are of the given object



(45)

Howmany two digt numbers are there ?

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