Question Paper - MATHS

1 Mark Questions

(1)

Write the sequence of prime numbers

(2)

Two angles of a triangle are 45^o,90^o. What is the ratio of the sides ?

(3)

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

(4)

How many two digits perfect squares are there

(5)

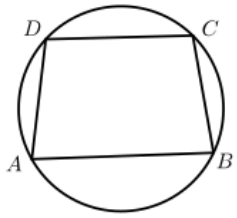
2 Mark Questions

(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

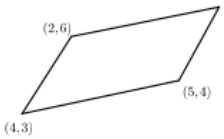
(7)

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



(8)

The verticesof a triangle are given.



Find the coordinates of the fourth vertex

(9)

Write the product $(x-1)\times(x+1)$

(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 $P(x)$

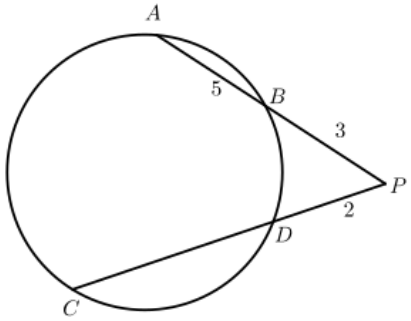
3 Mark Questions

(11)

Write the sequence of the squares of all odd numbers. What is its algebra?

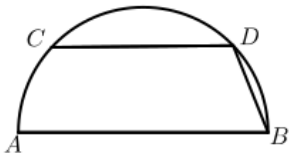
(12)

in the figure $AB, CD$are extented and intersect at P. If $AB = 5, BP = 3, PD = 2$ then find CD ?



(13)

In the figure $AB$is the diameter and $CD$is parallel to the diameter. $AB = 8$cm, $BD = 2$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)

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)

When the square of a number is added to one more than ten times that number we get 300. Calculate the number [3]

(18)

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

(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 out the cyclic quadrilaterals among the following classes of quadrilaterals.

* Rectangles * Squares * Parallelograms * Rhombuses

* Trapeziums * Isosceles trapeziums

4 Mark Questions

(21)

The 5 th term of an arithmetic sequence is 40 and 10th term 20. Find 15th term. How many terms of this sequence makes the sum 0

(22)

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

⋆Draw the figure

⋆ Mark the center, BO and CO

⋆ Find the measure of angleBOC

⋆ Write the angles of triangle OBC

(23)

A child obsered an airoplane flying horizontally at the height 1km at an angle of elevation 60°at an instant.After ten seconds he saw the plane at the angle 30°. Calculate the speed of the plane

(24)

The radius of a cone is 5cm, slant height 13cm . Calculate its height

(25)

The product of Ramu's age before 5 years and his age after 9 years is 15. Find his present age

(26)

prove that x^2+2x+2cannot be written as the product of first degree polynomials

(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?

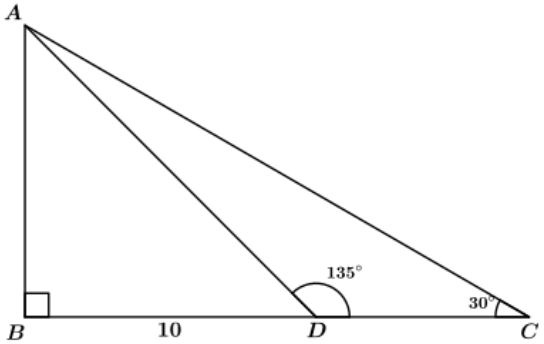
(28)

In the figure, $BD = 10cm$. Calculate $\angle BAD$ and $\angle BAC$

Calculate the sides of $\triangle ADC$.

Find the area of $\triangle ADC$.

What is the ratio of the sides of a triangle with angle measures 15 °, 30 °, 135 °?



(29)

If the point $(0, 2)$ is equidistant from $(3, a)$ and $(a, 5)$, find a.

(30)

The score of a batsman in 6 matches are given.

$$10, \quad 15, \quad 20, \quad 22, \quad 18, \quad 5$$

- Find the mean of these scores.
- Suppose he scored 130 runs in the 7^{th} match. Now what is the mean score ?
- Is this mean score gives a clear indication of his performance?
- Find the median of these scores.

5 Mark Questions

(31)

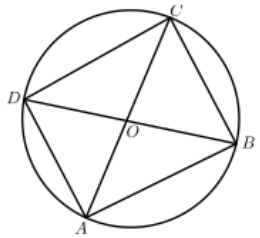
The common difference of an arithmetic sequence is a prime above 2. The difference between two terms is 224. Can 2017 be the difference between any two terms of this sequence

(32)

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
⋆ 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)

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?

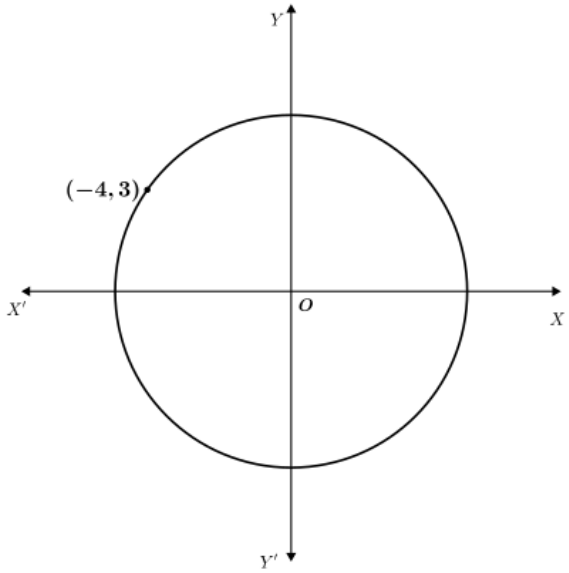
(38)

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?

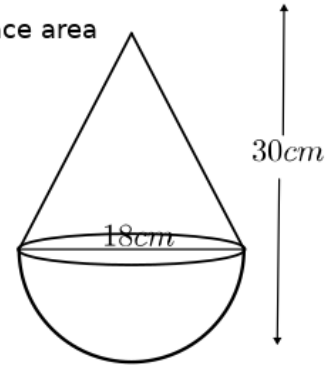
(39)

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.



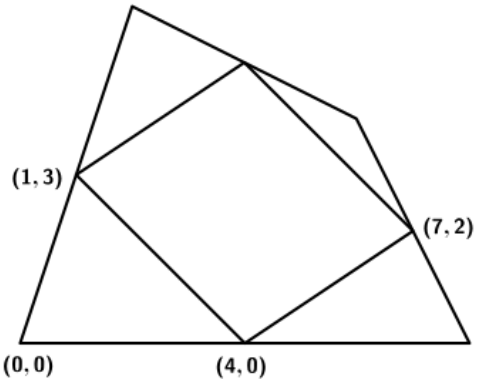
(40)

Find the total surface area



(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 ?

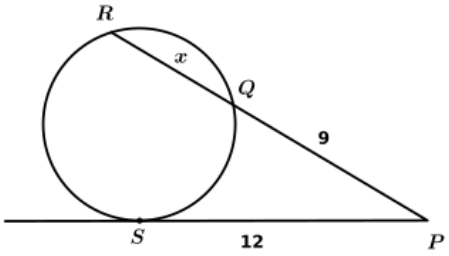
(43)

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)

In the picture, the circle touches the axes at A and B.
Find the coordinates of B.
Find the radius of the circle.
Find the coordinates of the centre of the circle.
Write the equation of the circle.