Question Paper - MATHS

1 Mark Questions

(1)

Write the sequence of multiples of 3

(2)

The angles of a triangle are 30°,60°,90°. What is the ratio of the sides ?

(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 $5\times 1(1+6)$, second term $5\times 2(2+6)$.Write its algebra

(7)

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

(8)

If$A(2,-1), B(3,4), C(-2,3)$are the vertices of a triangle find 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 first term of an arithmetic sequence is 17 and its common difference 8.Is 2017 a term of this sequence?

3 Mark Questions

(11)

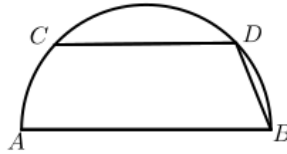The algebra of an arithmetic sequence is $3n-2$. Write the sequence. Is 99 a term of this sequence

(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. $AB = 8$cm, $BD = 2$cm ,findCD

(14)

Draw a circle of radius 3cm. Construct two tangents from a point at a distance 7cm from the center of this circle.

(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)

What is the 5th term of the sequence $23, 18, 13, ...$?What is the 6th term ?

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

   * Rectangles   * Squares   * Parallelograms   * Rhombuses

       * Trapeziums   * Isosceles trapeziums

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)

In triangle ABC $AB = 8$cm, $BC = 6$cm , $AC = 10$cm.

★What kind of triangle is this?

★ What is the position of B based on the circle with AC as the diameter? Why?

★ What is the position of A based on the circle with BC as the diameter? Why?

★ What is the position of the point C based on the circle with diameter AB ?

(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)

When 8 times a number is added to its square we get 8.Find the number by making the equation properly

(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 probabilty of getting sum of the face numbers a prime number

(27)

Draw a rectangle of sides 6 centimetres and 4 centimetres and draw a square of the same area.

(28)

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

(29)

A circular metal sheet of radius 12 centimetres is cut into 4 equal sectors and bent into cones.

- Howmany such cones can be made? What is the slant height of one such cone?
- Calculate the base radius of one such cone.
- Find curved surface area of one such cone.

(30)

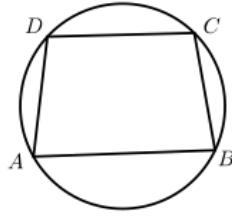Find the length of the perpendicular to the diameter in each semicircles given.
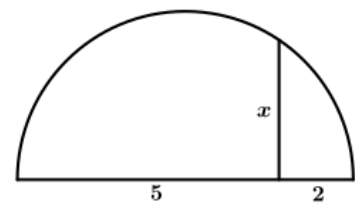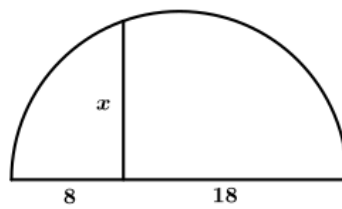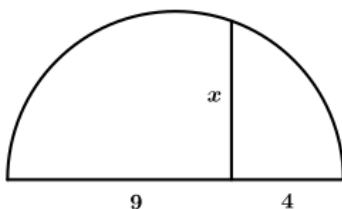
5 Mark Questions

(31)

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

(32)

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)

Draw a line of length $\sqrt{12}$. Construct a square with this line as a side. Can you construct a line of length $\sqrt{48}$ in the same figure

(34)

A cone of largest size is carved from a wooden cylinder . If the volume of the cylinder is 1500π ,calculate the volume of the cone . If the height of the cylinder is 1cm, what is the height and radius of the cone
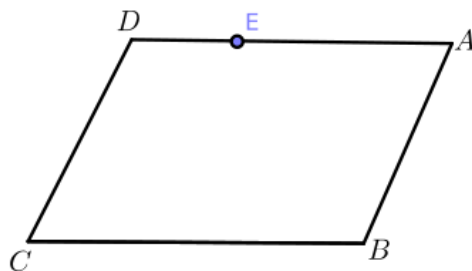
(35)

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)

In the parallelogram $ABCD$, $A(6,4)$, $B(15,4)$. $E(9,10)$ is a point on CD. Find the length of AB. Calculate the area of the parallelogram

(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]
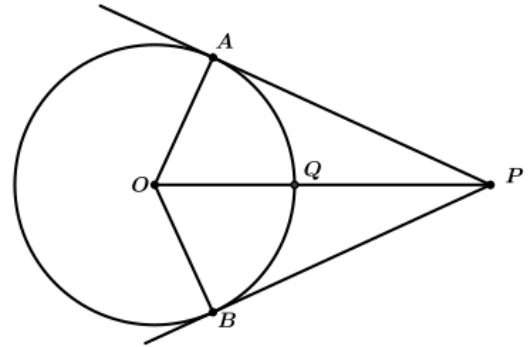
(39)

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 $PQ = 25cm$, then
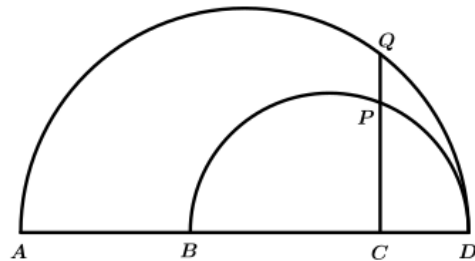

- What is the radius of the circle?

- 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)

In the figure, $AD = 10cm, BD = 6cm, CD = 2cm$.
Find CP, CQ, PQ.

(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?

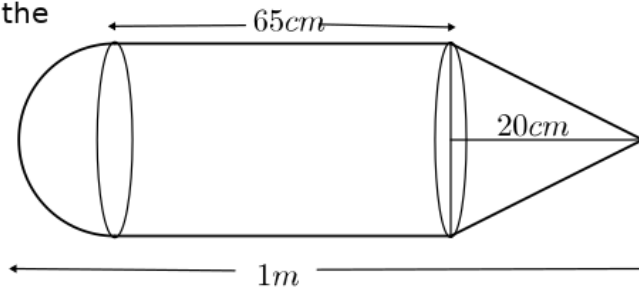- From which box is it more probable to draw a white bead?

(43)

Find the perimeter of the given quadrilateral

D(3, 8)

C(7, 6)

A(2, 3)   B(7, 3)
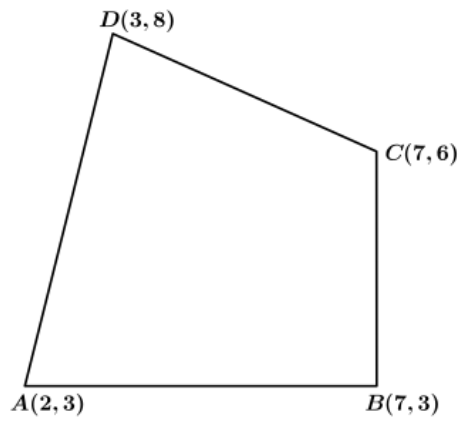
(44)

Find the total surface are of the given object

65cm

20cm

1m

(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