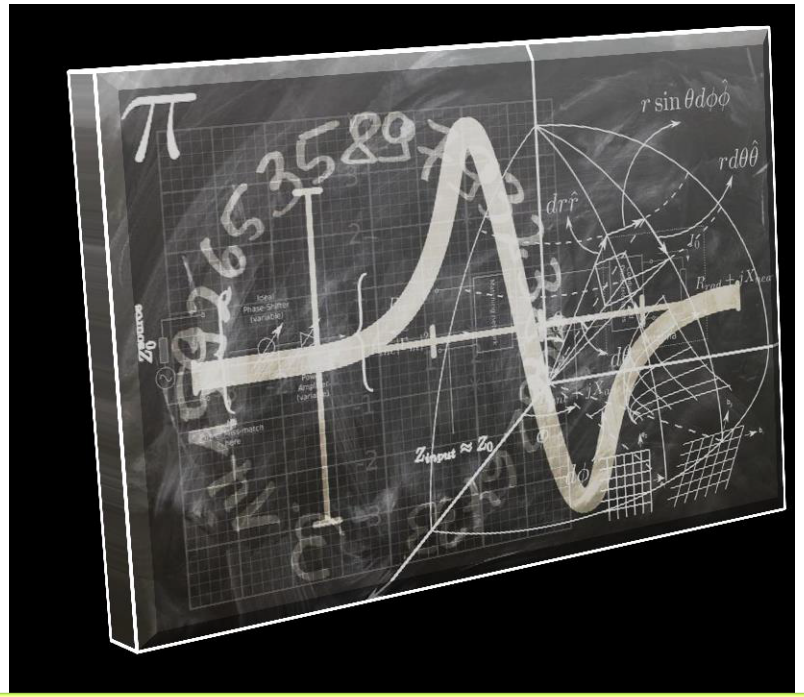


Self Evaluation
SSLC
Mathematics

English (Q)

JOHN P A

Self Evaluation

Mathematics Test 1

1 hour

25 scores

1) The difference between fifth term and tenth term of an arithmetic sequence is 20.
What is the difference between 10 th term and 20 th term of the same arithmetic sequence ?

(a) 10 (b) 20 (c) 40 (d) 60

1 score

2) The letters of the word $APPLE$ are written in small paper pieces and placed in a box.One is taken from the box without looking into the box.

a) What is the probability of getting the letter P?

b) What is the probability of not getting P?

2 score

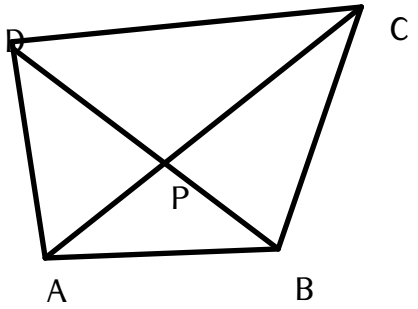
3) The heights of 12 members of a team are listed below.
143 cm , 157 cm , 138 cm, 160 cm, 140cm, 173 cm, 142 cm, 119 cm , 134 cm, 150 cm, 164 cm, 138 cm

a) What is the median height?

b) How many members are there above median height?

2 score

4) In the quadrilateral $ABCD$
$\angle A = 110^\circ$
$\angle B = 60^\circ$
$\angle C = 70^\circ$



a) What is the measure of $\angle D$?

b) Write the relation between PA, PB, PC, PD

c) If $PA = 4, PC = 9, PD = 3$ then what is PB?

3 score

5) The difference in the length of two adjacent sides of a rectangle is 2 and the area 35 square unit.

a) If the smaller side is x then what is the larger side?

b) Write a equation connecting the sides and area of the rectangle.

c) Calculate the sides and the perimetre of the rectangle.

3 score

6) In triangle ABC Length of the sides are : $AB = 8$cm, $AC = 8\sqrt{3}$, $BC = 16$.

a) What kind of triangle is this ?

b) What are the angles of this triangle?

c) What is the perpendicular distance from A to BC?

d) What is the radius of the circle passing through its vertices.

4 score

7) Draw the following geometric figure and answer the question

a) Two angles of a triangle are $50°$ and $75°$.A circle of radius 2.5cm touches its sides inside.

b) Mention the geometric concept used in your method of construction.

5 score

8) Manju has drawn a circle in geogebra axes mod .The vertices of the square $ABCD$ are on a circle with origin at the centre. If the point A is $(4, 4)$ then

a) What is the radius of the circle?

b) What are the coorinates of the points where the circle cut the axes?

c) What are the other vertices of the square?

d) Find the area of the square $ABCD$

5 score

[1]

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Self Evaluation

Mathematics Test 2

1 hour

25 scores

1) Algebraic form of an arithmetic sequence is $\frac{3}{7}n+1$. What is the first integer term of this sequence?

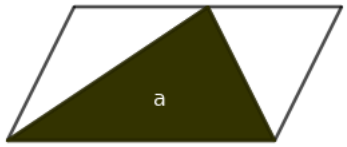
(a) 4 (b) 7 (c) 12 (d) 6

1 score

2) Black triangle is drawn inside a parallelogram such that the one side of the triangle coincides on side of the parallelogram and opposite vertex is on the opposite side.If the area triangle is a then

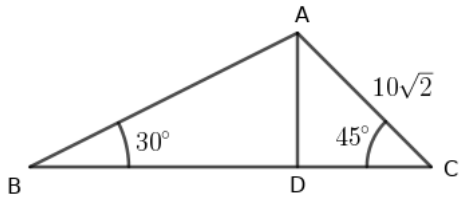
a) What is the area of the parallelogram?

b) A fine dot is placed into the figure without looking into the figure. What is the probability of falling the dot in the black triangle?



2 score

3) In triangle ABC , AD is perpendicular to BC, $\angle B = 30^\circ$ and $\angle C = 45^\circ$, $AC = 10\sqrt{2}$cm



a) What is the length of the altitude to BC?

b) What is the length of the side AB?

2 score

4) A semicircular plate of radius 10cm is rolled into a cone.

a) What is the slant height of the cone?

b) What is the radius of the cone?

c) Calculate the curved surface area of the cone?

3 score

5) $(-1,1),(2,-2),(-3,3)$ are three points on a line.

a) Write the coordinates of another point on this line?

b) What is the slope of this line?

c) Write the general relation between the coordinates of points on line that you observe from the given points .

3 score

6) $p(x) = x^3 - 4x^2 + 7x - 4$ is a third degree polynomial.

a) Find $p(1)$

b) Write a first degree factor of this polynomial.

c) Which number should be added to $p(x)$ to get a polynomial $q(x)$ in which $x + 1$ is a factor?

4 score

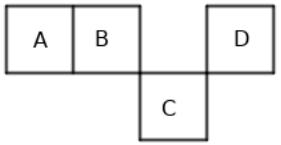
7) Two angles of a triangle are $70°$ and $80°$.The vertices of the triangle are on a circle of radius 3 cm.

a) Construct the triangle.

b) Write the principle of construction.

5 score

8) The squares are taken from a calandar . Each square contains a day number.



a) If $A = x$ write B, C and D

b) If $C \times D = 91$ then form a second degree equation in x

c) Find x by solving the equation.

d) Write B, C and D

5 score

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Self Evaluation

Mathematics Test 3

1 hour

25 scores

1) In the polynomial $p(x) = ax^3 + bx^2 + cx + d$, $a + b = -7, c + d = 7$ then which of the following is always a factor of $p(x)$?

(a) $x - 1$ (b) $x + 1$ (c) $x + 2$ (d) $x - 2$

1 score

2) In triangle ABC if $A(0, 0), B(6, 0), C(0, 8)$ then

a) What is the mid point of the side BC?

b) What is the radius of the circle passing through the vertices?

2 score

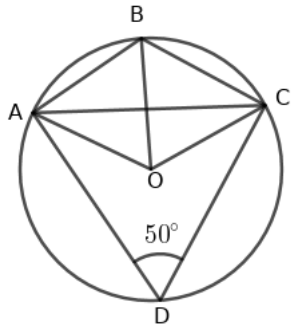
3) The radius and height of a cone are equal. Slant height is 12 cm

a) What is the radius ?

b) Find the curved surface area of the cone

2 score

4) In the figure O is the centre of the circle. $AB = BC$, $\angle ADC = 50^\circ$



a) What is the measure of $\angle AOC$?

b) What is the measure of $\angle ABC$

c) What is the measure of $\angle BAC, \angle BCA$

3 score

5) $97, 94, 91 \cdots$ എന്ന സമാന്തരശ്രേണി പരിഗണിക്കുക

a) What is the common difference ?

b) Write the algebraic form of this sequence?

c) Which is the first negative term of this sequence?

3 score

6) Sum of the area of two squares is 116sq.cm .The difference between the perimetres is 24.

a) If the side of the small square is x then what is the side of the big square?

b) Form a second degree equation.

c) Calculate the side of the squares .

4 score

7) One side of a triangle is 6cm.Angle at the ends of this side are $40°, 60°$.

a) Draw the triangle.

b) Construct the circle which touches its sides.

5 score

8) A child standing in the bank of a river observes the top of a tree on the other side of the river at an angle of elevation $60°$. When moves 20metre back the top of the tree is found at the angle $30°$.

a) Draw a rough diagram

b) Calculate the height of the tree.

c) Calculate the width of the river.

5 score

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Self Evaluation

Mathematics Test 4

1 hour

25 scores

1) What is the mean of first 100 odd numbers?

(a) 100 (b) 200 (c) 300 (d) 120

1 score

2) Angle sum of a 9sided polygon is 1260°.The angles arranged in the ascending order makes an arithmetic sequence.

a) Which angle comes as the middle term of the sequence ?

b) If the smallest angle is 104° then what is the largest angle?

2 score

3) $p(x) = 3x^3 + 5x^2 - 7x + 1$ is a third degree polynomial.

a) Find $p(1)$

b) Write the first degree factor of $p(x) - p(1)$

2 score

4) A box contains 6 black balls and 4 white beads.A bead is taken from the box at random.

a) What is the probability of getting a black dot?

b) One black bead is removed and some white beads are added into the box.The probability of getting white bead becomes two times the probability of getting black bead.How many white beads are added?

c) How many beads are there in the box now ?

3 score

5) A chord AB of length 18 cm is drawn in a circle.The ends of the chord makes 120° at the centre of the circle.

a) Draw a rough diagram.

b) Draw a diametre from A as Ac and join BC.What is the angle between AC and BC?

c) What is the radius of the circle?

3 score

6) In triangle ABC, $A(-3, 2), B(7, 2), C(4, 12)$.

a) Which side is parallel to x axis ?

b) What is the length $AB$and altitude to AB?

c) Calculate the area of the triangle.

4 score

7) An wooden square prism has base edge 10cm and height 12cm.A cone of largest size is carved from the prism.

a) What is the radius of the cone?

b) What is the height of the cone?

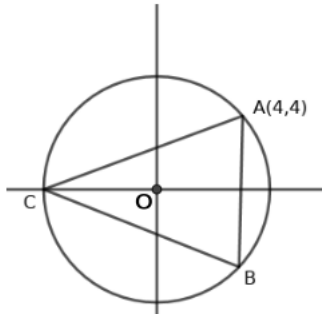
c) Find the slant height of the cone?

d) Calculate the total surface area of the cone?

e) Calculate the volume of the cone.

5 score

8) $A(4,4)$ is a point on the circle with origin as the centre. Chord AB is parallel to y axis.



a) Write the coordinates of B

b) Write the coordinates of C

c) What is the measure of angle ACB

d) Calculate the area of triangle AB using the lengths AB and PC.

5 score

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Self Evaluation

Mathematics Test 5

1 hour

25 scores

1) What is the position of the vertex of an equilateral triangle based on a circle with opposite side as the diametre.

(a) Inside the circle (b) On the circle (c) Outside the circle (d) Anywhere

1 score

2) $A(1,0), B(0,1), C(-1,0), D(0,-1)$ are the vertices of a squdrilateral

a) Suggest a suitable name to $ABCD$

b) What is the length of a side?

2 score

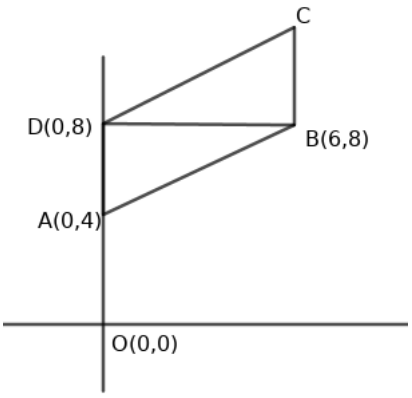
3) $p(x) = x^3 + 1, q(x) = x^3 + x^2 + x + 1$

a) If $p(a) = q(a) = 0$ then what is a?

b) Write the common first degree factor of these polynomials

2 score

4) $ABCD$ is a parallelogram , $A(0,4), B(6,8), D(0,8)$.



a) Write the coordinates of C

b) What is the length of the diagonal BD

c) Calculate the area of the parallelogram

3 score

5) Consider the arithmetic sequence $1, 5, 9, 13 \cdots$

a) What is the common difference of this sequence ?

b) What is the remainder when the terms are divided by its common difference ?

c) Which is the first three digit term of this sequence ?

3 score

6) The weights of 12members of a group are given below .

Weight	67	70	72	73	75
Number of members	4	3	2	2	1

a) What is the median weight?

b) How many members are there above median weight?

4 score

7) The smallest side of a right triangle is 4 less than its hypotenuse.Third side is 2 more than the smallest side.

a) If the smallest side is x then write the length of hypotenuse and third side?

b) Write the equation connecting the sides of the triangle.

c) What is the length of the smallest side ?

d) Write the sides of the triangle.

5 score

16) The top of a building can be seen at an angle of elevation $45°$ from a point some distance from the base . When move 20 metre towards the tower the nngle becomes $60°$.

a) Draw a rough diagram .

b) Write equations using the given conditions .

c) Calculate the distance from the base of the tower to the points of observation.

d) Calculate the height of the tower.

5 score

1

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Self Evaluation

Mathematics Test 5

1 hour

25 scores

1) In the polynomial $p(x)$,if $p(1) = 5$ then what is the factor of $p(x) - 5$?

(a) $x + 1$ (b) $x - 1$ (c) $x + 2$ (d) $x - 2$

1 score

2) $x^2 + y^2 = r^2$ is the equation of a circle with centre origin and radius r.

a) What is the radius of the circle $x^2 + y^2 = 36$?

b) What are the coordinates of the point where the circle cut the axes?

2 score

3) The sum of a number and its square is 30 .

a) If x is the number write the equation using the given condition.

b) What are solutions of this equation.

2 score

4) Diametre of a sphere is 6cm .

a) Calculate the surface area of the sphere.

b) If it is cut off into two hemispheres then what is the curved surface area of a hemisphere?

c) Calculate the total surface area of the hemisphere.

3 score

5) The numbers $2, 3, 4$ are written in small paper pieces and placed in a box.The fractions $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}$ are written in another paper pieces and placed in another box.One is taken from each box at random.

a) How many pairs are possible as outcome?

b) What is the probability of getting the product in the pair a natural number?

c) What is the probability of not getting the product in the pair a natural number?

3 score

6) Draw a rectangle with the sides 6 cm and , 4cm . Construct a square whose area equal to area of the rectangle.Measure the length of the side of the square and write aside .

4 score

7) You are familiear with the addition of first n natural numbers. Look at the pattern carefully

$$1^3 = 1$$

$$1^3 + 2^3 = 9 = 3^2 = (1+2)^2$$

$$1^3 + 2^3 + 3^3 = 36 = 6^2 = (1+2+3)^2$$

Observing this pattern answer the questions given below .

a) How many cubical numbers are there among the natural numbers from 1 to 8000?

b) What is the sum $1^3 + 2^3 + 3^3 + 4^3$

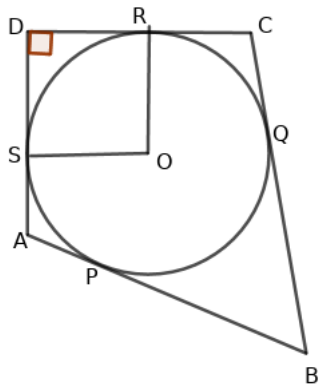
c) Write the sum of the cubes of natural numbers from 1 to 6

d) The sum of the first 10 natural numbers is 55. what is the sum $1^3 + 2^3 + 3^3 \cdots 10^3$

e) Write the formula for calculating $1^3 + 2^3 + 3^3 \cdots + n^3$

5 score

8) In the quadrilateral $ABCD$, $\angle D = 90^\circ$
The sides AB, BC, CD, DA touches the circle at P, Q, R, S.
$BC = 38$cm , $CD = 25$ cm , $BP = 27$cm



a) How do we know $ORDS$ a square ?

b) What us the length CQ?

c) What is the length of the square $ORDS$

d) What is the radius of the circle?

5 score

1

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Self Evaluation

Mathematics Test 5

1 hour

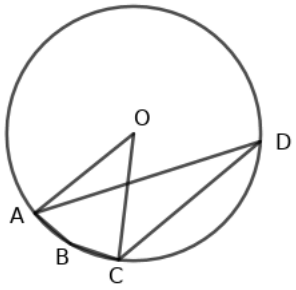
25 scores

1) How many odd numbers from 1 to n in an order makes the sum 400?

(a) 20 (b) 30 (c) 50 (d) 25

1 score

2) O is the centre of the circle.If $\angle AOC = 80°$then



a) What is the measure of $\angle ADC$?

b) What is the measure of $\angle ABC$?

2 score

3) Triangle ABC is an equilateral triangle . If $A(1,1), B(7,1)$then

a) What is the length of its side ?

b) Write the coordinates of C

2 score

4) If each side of a square is reduced by 1 we get a new square of area 100sq.cm .

a) If x is the side then form an equation.

b) Find the side of the square .

c) What change occur in the area if the side is reduced by 1

3 score

5) Consider an equilateral triangle of side 10cm

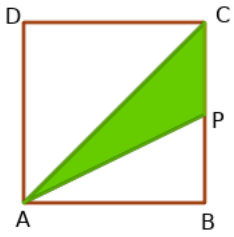
a) What is the altitude ?

c) What is the area of the square with altitude as the side ?

d) What is the length of its diagonal .

3 score

6) $ABCD$ is a square, a triangle is shaded inside . P is the mid point of a side .



a) If the side of the square is a then what is the altitude to the side PC of the triangle.

b) If a is the side of the square then what is the area of the shaded triangle?

c) If a fine dot is placed into the figure then what is the probability of falling the dot in the shade?

4 score

7) Consider the points $A(2,0), B(-6,-2), C(-4,-4), D(4,-2)$

a) What is the slope of AB and CD

b) Find the slope of AD and BC

c) Is $ABCD$ a parallelogram?

5 score

8) The marks obtained by the students of a class are given below .

Marks	Number of houses
0 - 10	4
10 - 20	8
20 - 30	10
30 - 40	9
40 -50	5

a) Form a table for calculating the median.

b) In which class the middle mark occurs

c) What is the mark of 13 th student ?

d) What are the marks comes in the middle?

e) Calculate the median mark.

5 score

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Self Evaluation

Mathematics Test 8

1 hour

25 scores

1) What is the slope of x axis ?

(a) 0 (b) 1 (c) -1 (d) $\frac{1}{2}$

1 score

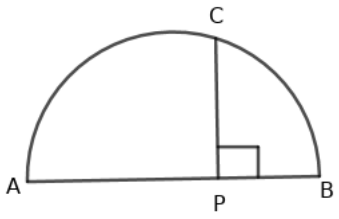
2) First term of an arithmetic sequence is $\frac{1}{2}$ and common difference $\frac{1}{6}$ then

a) What is the algebraic form of the sequence ?

b) At what position 2occurs in the sequence .

2 score

3) AB is the diametre of the semicircle. P is a point on AB , AB is perpendicular to PC $PC = 6$cm , $PB = 3$cm then



a) What is the radius of the circle ?

b) What is the area of the sqaure with side PC?

2 score

4) Consider the sequence of even numbers $2, 4, 6, 8 \cdots$

a) Write the algebraic form of the sequence .

b) How many terms beginning from first term in the order makes the sum 210

3 score

5) Consider the following angle measures.

$$\sin 42^\circ, \cos 78^\circ, \sin 70^\circ, \cos 14^\circ$$

a) Rewrite all these into equivalent $\sin$ measures.

b) Which is the smallest and largest among them ?

c) Write these in the ascending order.

3 score

6) A line passes through $(3,4),(6,8)$

a) What is the slope of this line?

b) Is this line passes through the origin?

c) Write the coordinates of another point on this line .

4 score

7) A circular disc of central angle $120°, 240°$ is cut into sectors .Thes sectors are rolled into cones.

a) Which measure is common in both cones?

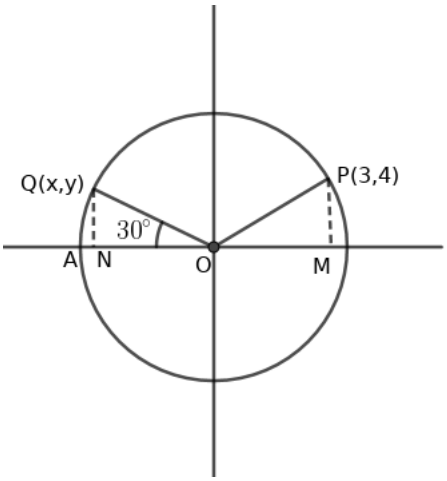
b) What is the radius of the small cone ?

c) What is the radius of the bih cone ?

d) What is the relation between the radii of cones and radius of the circular plate ?

5 score

8) $P(3,4)$ is a point on the circle with centre at the origin.
$Q(x,y)$ is another point on the circle such that $\angle AOQ = 30°$



a) What is the radius of the circle?

b) What are the points at which the circle cut the axes?

c) Write the coordinates of Q

d) Write the coordinates of another point on the circle .

5 score

[1]

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Self Evaluation

Mathematics Test 9

1 hour

25 scores

1) If $\sin A = \cos B$ then what is $A + B$?

(a) 100° (b) 90° (c) 180° (d) 45°

1 score

2) Consider the sequence $p(x) = x^2 - 7x + 12$

a) Write $p(x)$ as the product of two first degree factors.

b) Solve the equation $p(x) = 0$

2 score

3) The atmospheric temperature of seven days in a city are given below

$$26^\circ C, 28^\circ C, 25^\circ C, 30^\circ C, 27^\circ C, 26^\circ C, 25^\circ C$$

c) Calculate median temperature

d) How many days are there above median temperature? How many days are there below median temperature.

2 score

4) Fifth term of an arithmetic sequence is 10 and its tenth term is 5

a) What is the common difference?

b) What is the fifteenth term?

d) What is the product of first 15 terms?

3 score

5) Consider the numbers $A(2, 0), B(-6, -2), C(-4, -4), D(4, -2)$

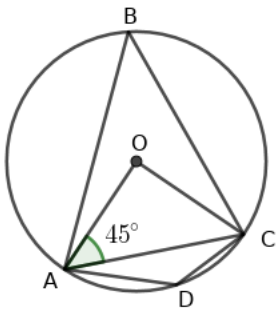
a) What is the slope of AB and CD?

b) What is the slope of AD and BC

c) Is $ABCD$ a parallelogram ?

3 score

6) O is the center of a circle. $\angle AOC = 45^\circ$ then



a) What kind of triangle is OAC?

b) What is the measure of $\angle ABC$

c) What is the measure of $\angle ADC$

d) If the radius of the circle is 6cm then what is the length of the chord AC?

4 score

7) Numbers $1, 2, 3, 4$ are written in small peper pieces and put in a box. Numbers $1, 2, 3$are writetn in small paper pieces and put in another box . One is taken from each box without looking into the box.

a) How many pairs are possible?

b) What is the probability of getting the product of the numbers in the pair an odd number?

c) What is the probability of getting the product of the numbers in the pair an even number?

5 score

8) A two digit number is 4 times the sum of its digits.The number is 2 times the product of the digits.

a) If the digit in the one's place is y and digit in tens place is x then write the number

b) Make a second degree equation using the given condition.

c) Find the number.

5 score

1

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Self Evaluation

Mathematics Test 10

1 hour

25 scores

1) In the polynomial $p(x) = ax^3 + bx^2 + cx + d$ if $a + b + c + d = 0$then what is the factor of $p(x)$

(a) $x + 1$ (b) $x - 1$ (c) $x + 2$ (d) $x - 2$

1 score

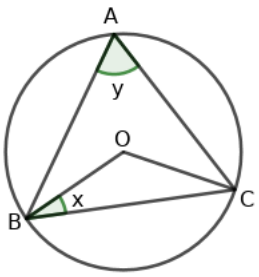
2) When the angles of a right triangles form an arithmetic sequence if arranged in an order.

a) Which angle comes in the middle?

b) Write the angles of the triangle

2 score

3) In triangle ABC, the centre of the circumcircle is O.
If $\angle BAC = y, \angle OBC = x$ then



a) What is the measure of $\angle BCO$?

b) Prove that $x + y = 90^\circ$

2 score

4) $OABC$സാമാന്തരീകമാണ്. $O(0,0), A(5,0), B(7,4)$ആയാൽ

a) Draw a rough diagram

b) Write the coordinates of C

c) Calculate the area of the parallelogram.

3 score

5) Length of a rectangle is 8 more than its breadth .

a) If breadth is x then what is length

b) If the area is 240sq.cm form a second degree equation.

c) Find the length and breadth

3 score

6) Base perimetre of a cone is 20πcm ,slant height 18cm . It is made by rolling a sector

a) What is the radius of the sector?

b) What is the radius of the cone?

c) What is the central angle of the sector?

d) What is the curved surface area of the cone?

4 score

1) Consumption of electricity in an area is given below

Use of Electricity in Unit	Number of houses
80 - 90	3
90 - 100	6
100 -110	7
110- 120	10
120 – 130	9
130 - 140	5

a) Which house comes in the middle if the houses area arranged in the ascending order of consumption

b) What is the consumption of 17 th house.

c) Calculate the consumption of the houses comes in the middle?

d) Calculate the median

5 score

8) Triangle ABC is an equilateral triangle . If $A(1,1), B(7,1)$then

a) What is the length of a side?

b) What is the mid point of AB

c) What is the altitude of the triangle?

d) Write the coordinates of C

e) Write one point c

5 score

[1]

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Self Evaluation

Mathematics Test 10

1 hour

25 scores

1) A sector is rolled into a cone. The slant height of the cone is two times the radius of the cone.What is the central angle of the sector?

(a) $90°$ (b) $100°$ (c) $150°$ (d) $180°$

1 score

2) The marks obtained by some students in a class are given below

$$14, 17, 11, 19, 15, 17, 13, 10, 14, 18$$

a) Which mark comes in the middle in the ascending order.

b) Calculate the median

2 score

3) Consider the polynomial $p(x) = x^3 + 4x^2 + x - 7$

a) Is $x - 1$ a factor of this polynomial

b) If not what should be subtracted from $p(x)$ to get $q(x)$ in which $x - 1$ a factor

2 score

4) $A(1, -2), B(x, 4)$ are the points on a line of slope 3

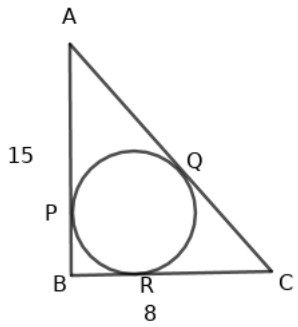
a) What is x?

b) Write the coodinates of one more point on this line ?

c) At what point the line cut x axis ?

3 score

5) In the figure $\angle B = 90°$,$AB = 15$cm , $BC = 8$ cm



a) Draw a rough diagram and mark the centre O
Suggest a suitable name to $PORB$

b) If $PB = x$ then find AP, AQ, CR, CQ

c) What is the radius of the circle.

3 score

3) Line passing through x axis passing through $(0, 6)$.Line parallel to y axis passing through $(8, 0)$.

a) Write the coodinates of the point of intersection$P$ of the lines

b) What is the distance from origin to P

c) Write the coordintes of another point on this line .

4 score

7) A boy observes the top pf a building of height 30metre some distance away from the foot of the tower at the angle of elevation .Moving some distance towards the building the angle of elevation becomes 60°

a) Draw a rough diagram

b) What is the distance from the foot of the tower to the second point of observation

c) What is the distance between the two points of observation.

d) What is the distance from the foot of the tower to the second point of observation.

5 score

8) Algebraic form of the sum of first n terms of a sequence is $n^2 + n$.

a) Write the sequence .

b) Write the algebraic form of this sequence .

c) Can the sum of some terms of this sequence 2021?

d) How many terms are below 100

e) Find the sum of all terms below 100

5 score

[1]

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scale=1

Self Evaluation

Mathematics Test 10

1 hour

25 scores

1) The length of tangent from a point 13 cm away from the centre of a circle is 12cm . What is the radius of the circle?

(a) 5cm (b) 10cm (c) 15cm (d) 18cm

1 score

2) Algebraic form of an arithmetic sequence is $3n+5$

a) What is its 10 th term?

b) What should be added to its 10 th term to get 20 th term?

2 score

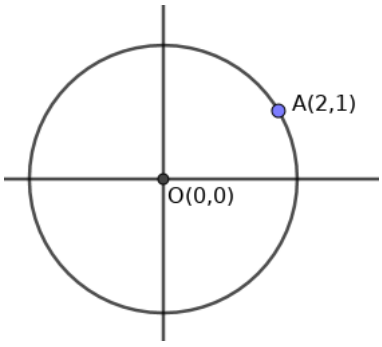
3) Consider the sequence $2, 4, 6, 8, \cdots$

a) What is the mean of first 20 terms?

b) How many terms from the beginning makes its mean 31?

2 score

4) $(1, 2)$ is a point on the circle with centre at the origin.



a) What is the radius of the circle?

b) What are the points where the circle cut the axes?

c) Write the coordinates of one more points on this circle.

3 score

5) Consider the polynomial $p(x)= ax^2 - 2bx + c$

a) If $x-1$ is a factor prove that a, b, c are in an arithmetic sequence ?

b) Write two polynomials having a, b, c in an arithmetic sequence .

c) x^2-1 is a factor of $p(x)$ then what is $a+c$?

3 score

6) The points $A_1, A_2, A_3 \cdots A_n$ are marked in a circle.These are joined pairwise to get chords

a) How many chords can be drawn from a point?

b) What is the total number of chords?

c) How many points are needed to get 35 chords?

4 score

7) A sector of central angle 288° and radius 25cm is taken from a circulat sheet .

a) What is the radius of the cone?

b) What is the height of the cone ?

c) Find the lateral surface area of the cone?

d) What is the radius of the cone made by rolling the remaining part?

5 score

3) The table given below shows the daily wages of workers in a factory .

ദിവസക്കൂലി	ജോലിക്കാരുടെ എണ്ണം
400-500	6
500-600	7
600-700	10
700-800	9
800-900	5
900-1000	4

a) Prepare a table for calculating the median.

b) In which calss 21 st wage comes?

c) What are the assumpptions for calculating median.

d) What is the wage of 14 th worker in the arrangement?

e) Calculate median

5 score

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scale=1

Self Evaluation

Mathematics Test 10

1 hour

25 scores

1) What is the altitude to the side BC of triangle ABC in which $A(4,10), B(1,5)$ and $C(7,5)$

(a) 5 (b) 6 (c) 10 (d) 11

1 score

2) A numerical sequence is obtained by adding 3 to the multiples of 7 in the order.

a) Write the algebraic form of the sequence.

b) Which is the smallest three digit term of this sequence?

2 score

3) The top of a tree of height $60\sqrt{3}$ metre is observed from a point 60m away from its foot .

a) Draw a rough diagram

b) What is the angle of elevation.

2 score

4) A square pyramid has base area 144 sq.cm and height 8 cm

a) What is the base edge?

b) What is the slant height?

c) Calculate the lateral surface area of the pyramid.

3 score

5) The sides of four squares are four consecutive natural numbers. The sum of the area of the squares is 174sq.cm

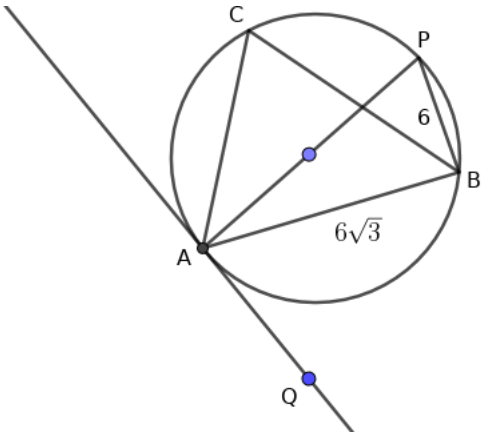
a) If the side of the small square is x then write the sides of other three squares.

b) Form a second degree using the given conditions.

c) Find the sides of the squares.

3 score

6) In the figure AP is the diametre of the circle.$AB = 6\sqrt{3}$cm $PB = 6$ cm



a) What is the radius of the circle?

b) What are the angles of $\triangle APB$?

c) What is the measure of $\angle ACB$?

d) What is the measure of $\angle BAQ$?

4 score

7) Three lines $x = 3, y = 4, 4x + 3y = 36$encloses a polygon.

a) Suggest a suitable name to this polygon.

b) Find the vertices of this polygon.

c) Calculate the area

d) What is the radius of the circle passing through the vertices of the polygon.

e) What are the coordinates of the circumcentre.

8) Consider the polynomial $p(x) = x^2 + 6x + k$

a) If $k = 0$then what are the first degree factors of $p(x)$?

b) What is the value of k to get two equal first degree factors ?

c) What are the values of k not for occuring a first degree factor to this polynomial?

d) If $k = 8$ what are the first degree factors of $p(x)$?

5 score

1

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Self Evaluation

Mathematics Test 14

1 hour

25 scores

1) The sum of a number and its square is 0. What is the number?

(a) -2 (b) 1 (c) 2 (d) -1

1 score

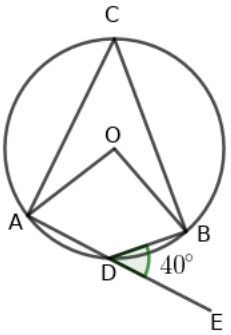
2) Algebraic form of an arithmetic sequence is $4n+3$.

a) What is the common difference ?

b) Can the difference between any two terms of this sequence 176

2 score

3) In the figure ,$BDE = 40°$then

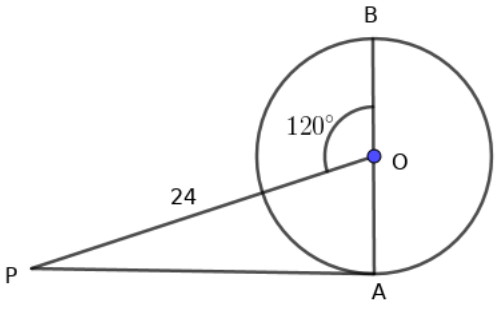


a) What is the measure of ACB?

b) What is the measure of AOB?

2 score

4) In the figure $\angle POB = 120°$, $OP = 24$cm , AB is the diametre of the circle .



a) What are the angles of $\triangle POA$

b) What is the diametre of the circle?

c) What is the length of the tangent from $P$to the circle?

3 score

5) Consider the points $A(1,-1), B(5,2), C(9,5)$

a) Find the lengths AB, BC and AC

b) Check whether these points are on a line or not.

c) What is the mid point of AC

3 score

6) $10A$യിൽ 30boys and 20girls in ten A. 15 boys 25girls in ten B.
One is selected from both the classes.

a) How many ways this selection can be done.

b) What is the probability of getting both are boys ?

c) What is the probability of getting both are girls?

4 score

7) A cone of maximum size is carved from a wooden block in the shape of a square prism with base edge 10cm and height 12cm .

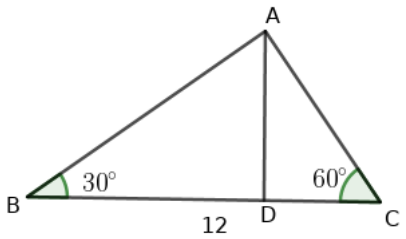
a) What is the radius of the cone?

b) What is the slant height?

c) Calculate the curved surface area of the cone ?

d) Calculate the total surface area .

8) In $\triangle ABC$, $\angle B = 30°, \angle C = 60°$, $BD = 12$cm



a) BC is perpendicular to DA, If $DB = x$ then what is DC?

b) From $\triangle BDA, \triangle CDA$ make two equations connecting the sides .

c) Find x

d) What is the perpendicular from A to BC

e) Find the area of $\triangle ABC$

5 score

1

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Self Evaluation

Mathematics Test 14

1 hour

25 scores

1) What is the distance from the origin to the point of intersection of the lines $x = 4$, $y = 3$

(a) 5 (b) 3 (c) 2 (d) 7

1 score

2) Consider the arithmetic sequence $7, 10, 13 \cdots$

a) How many numbers are there in the sequence below 100?

b What is the median of these numbers ?

2 score

3) Total surface area of a solid sphere is 100 sq.cm . Two hemispheres are made from this sphere .

a) What is the curved surface area of the hemisphere?

b) What is the total surface area of the hemisphere ?

2 score

4) Gifts are exchanged among a group of children.There are 132 gifts in total.

a) If there is n children in the group then how many gifts a child got ?

b) Form a second degree equation.

c) Calculate the number of children in the group

3 score

5) Manju has three coloured ear rings and chains, green, red and blue. She wear these ornaments in different ways .

a) How many ways she can ware the ornaments?

b) What is the probability of wearing ornaments of same colour

c) What is the probability of wearing ornaments of different colours

3 score

6) Consider the polynomial $p(x) = x^3 + 4x^2 + x - 6$

a) Find $p(1)$. Is $x - 1$ a factor of $p(x)$?

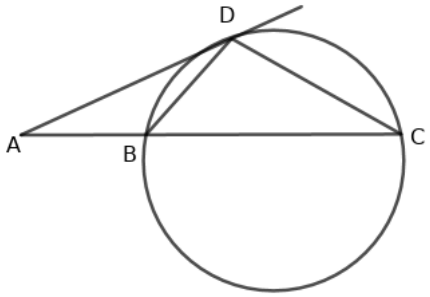
b) What is the quotient when $p(x)$ is divided by $x - 1$?

c) Write the quotient as the product of two first degree polynomials.

d) Find the solution of the equation $p(x) = 0$

4 score

7) In the figure $AB = BD$, the line AD touches the circle at A



a) What is the relation between the lengths AB, AC, AD

b) Establish the relation $AB \times AC = CD^2$

c) What is the property of $\triangle ACD$

d) If $\angle BAD = 30°$, The perpendicular from D to BC is 12cm then what is the langth of AD.

8) The first term of an arithmetic sequence is 3 and common difference 2.

a) Write the sequence .

b) How many times common difference to be added to its first term to get 10 th term.

c) What is its tenth term?

d) What is its 101 st term of the sequence?

e) Is 100 a term of the sequence ?

5 score

1

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Self Evaluation

Mathematics Test 14

1 hour

25 scores

1) Volume and surface area of a sphere are equal. What is the radius of the sphere ?

(a) 3 (b) 6 (c) 2 (d) 1

1 score

2) പുഴയ്ക്ക് കുറുകെ ഒരു പാലം നിർമ്മിച്ചിരിക്കുന്നു.പാലത്തിന്റെ നീളം 600മീറ്റർ .ഒഴുക്കിന്റെ ദിശയുമായി പാലം $45°$രൂപീകരിക്കുന്നു.

a) ഏകദേശചിത്രം വരക്കുക

b) പുഴയുടെ വീതി എത്രയായിരിക്കും?

2 score

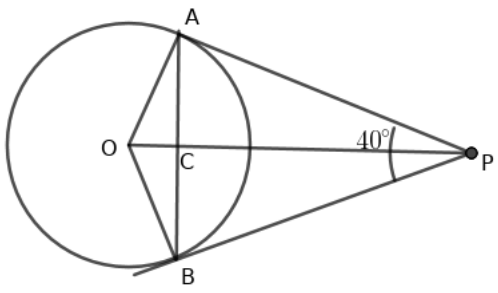
3) Vertices of a triangle are $A(8,6), B(8,-2), C(2,-2)$.

a) What is the centre of the circumcircle?

b) What is the radius of the circumcircle?

2 score

4) PA, PB are the tangents to the circle. O is the centre of the circle.



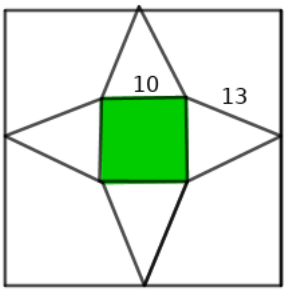
a) What are the measures of $\angle OAP, \angle OBP$

b) If angle $APB = 40°$ then what is angle AOB

c) The chords AB, CD intersect at C.How doses the lengths CO, CP, CA, CB related to eachother.

3 score

5) This is the outline for making a square pyramid drawn on a square paper.



a) What is the total lenght of its edges.

b) What is the slant height ?

c) What is the length of the side of the square paper taken for making the pyramid.സൂചിക നിർമ്മിക്കാൻ എടുത്ത സമചതുരക്കടലാസിന്റെ വശത്തിന്റെ നീളമെത്ര?

3 score

6) There is a circle with centre at the origin and radius 4

a) What are the points where the circle cut x axis x?

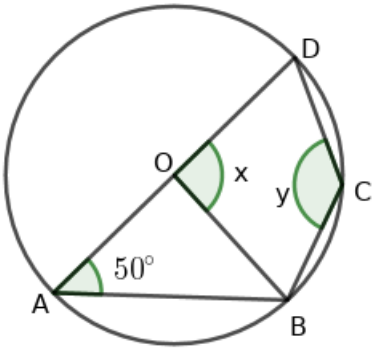
b) If $P(x, y)$ is a point on the circle , then write the equation of the circle.

c) Is $(2\sqrt{2}, 2\sqrt{2})$a point on this circle?

d) If $(2\sqrt{2}, 2\sqrt{2})$ is a vertex of a square and all other vertices are on this circle. Write the coordinates of the vertices.

4 score

7) $O$is the centre of the circle .$\angle DAB = 50^\circ$



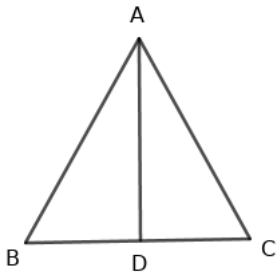
a) What is x

b) What is y

c) If $BC = CD$ then what is $\angle ADC$

d) If $BC = CD$ then what is $\angle ABC$

8) In triangle ABC, $AB = AC$
AD is the perpendicular from A to BC. This perpendicular distance is 2 more than BC. The area of the triangle is 60 sq.cm



a) If $BC = x$then what is AD?

b) Write an equation connecting BC, AD and area

c) What is the length of BC

d) What is the length of AD

e) Calculate the perimetre of the triangle.

5 score

1

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