MATHS FINAL TOUCH -APRIL 2022

1. Consider the arithmetic sequence 5,8,11,.....
   a) What is the common difference?
   b) What is the difference between its 10th and 18th terms?
   c) Is 100 a term of this sequence? Why?
   d) What is the 21st term of this sequence?

2. 5th term of an arithmetic sequence is 28 and its 9th term is 40.
   a) Find the common difference.
   b) Find its 13th term and first term.
   c) Is 100 a difference of any two terms of this sequence? Why?
   d) Find the algebraic form of this sequence.

3. Algebraic form of an arithmetic seqence is 5n+4.
   a) What is its first term and common difference?
   b) Which term of this sequence is 109?
   c) What is the algebraic form of an arithmetic sequence with first term 9 and common difference 4?

4. For an arithmetic sequence 9th term is 16 and 16th term is 9.
   a) What is the common difference of this sequence?
   b) What is the 25th term of this sequence?
   c) What is its 49th term?
   d) What is the sum of first 49 terms of this sequence?

5. 10,16,22,.... is an arithmetic sequence.
   a) What is the common difference of this sequence?
   b) Find the 8th term.
   c) Find the sum of first 15 terms of this sequence.
   d) What is the sum of first 15 terms of the arithmetic sequence 9, 15, 21,.....?

6. Sum of first 9 terms of an arithmetic sequence is 270.
   a) what is its 5th term?
   b) What is the sum of its 4th and 6th terms?
   c) If the common difference is 3, write this sequence.

7. a) Write an arithmetic sequence with sum of its first 5 terms is 100.
   b) Write an arithmetic sequence with sum of its first 5 terms is 100 and common difference 2.
   c) Write an arithmetic sequence with sum of its first 6 terms is 60.
   d) Write an arithmetic sequence with sum of its first 6 terms is 60 and first term 5

8. a) 1+2+3+.............+ 20 =......
   b) 7+14+21+........+140=......
   c) 9+16+23+........+142=......
   d) 16+30+44+......+242=....
   e) Find algebraic form of all these sequences.
   f) What is the difference between the sum of first 20 terms of the arithmetic sequence with algebra 7n+2 and that of the arithmetic sequence with algebra 7n+5.

9. a) What is the sum of first 10 natural numbers?
   b) What is the sum of first 10 terms of the arithmetic sequence with algebra 4n?
   c) What is the sum of first 10 terms of the arithmetic sequence with algebra 4n+1?
   d) What is the sum of first 10 terms of the arithmetic sequence with algebra 8n+1?

10. Consider the arithmetic sequence 10,17,24,....
    a) What is the common difference?
    b) What is the 20th term?
    c) What is the sum of first 20 terms of this sequence?
    d) What is the difference between the the sum of first 20 and next 20 terms of this sequence?

11. a) 2+4+6+..........+40=......
    b) 1+3+5+..........+39=......
    c) 20+60+100+.....+780=.....

12. Sum of first and 20th term of an arithmetic sequence is 80.
    a) What is the sum of its 2nd and 19th terms?
    b) Write another pair of terms with sum 80.
    c) Find the sum of first 20 terms of this sequence.

13. a) Write the sequence of 2 digit multiples of 6.
    b) Write the sequence two digit numbers which leaves 2 as reminder on dividing by 6.
    c) What is the largest two digit term of this sequence?
   d) Find the sum of all terms of this sequence.

14. 1
    2   3
    4   5   6
    7   8   9   10
    ....
    ....
    a) Write the next two lines of this pattern.
    b) What is the last and first number of 10th line of this pattern?
    c) What is the sum of all terms of 10th line of this pattern

15. Consider the arithmetic sequence 8,14,20,....
    a) Find the algebraic form of this sequence.
    b) Find the 20th term of this sequence.
    c) Find the algebra of sum of this sequence.
    [Sum of first n terms]
    d) Find the sum of first 10 terms of this sequence.

16. a) If the algebra of sum of the terms of an arithmetic sequence is $4n^2+5n$. Find first term and common difference.
    b) What is the sum of first n natural numbers?
    c) How many consecutive natural numbers starting from 1 should be added to get the sum 210?

17. Consider the arithmetic sequence 7,9,11,....
    a) Find the common difference.
    b) Find the sum of first n terms.
    c) Prove that 9 added to the sum of first n terms of this sequence form a perfect square.

18. Classify the following points P,Q,R are inside, outside and on the circle drawn with AB as diameter
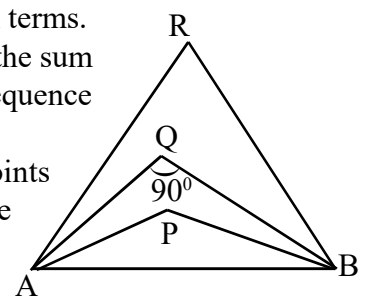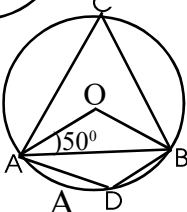
19. In the figure, ABCD is acyclic quadrilateral. ∠ABP=80⁰
    a) Find ∠D.
    b) Find ∠A+∠C.
    c) If ∠A is double of ∠C, then find ∠A and ∠C
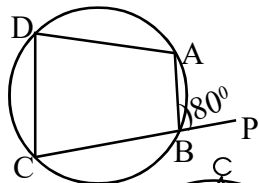
20. In the figure, O is the centre and ∠OAB=50⁰.
    a) Find ∠AOB.
    b) Find ∠ACB and ∠ADB.
    c) If ∠ACB=x and ∠OAB=y then prove that x+y=90⁰.

21. In the figure, O is the centre and ∠ABO=30⁰ and ∠OCA=20⁰
    a) Find ∠A.
    b) Find ∠BOC and ∠BDC.
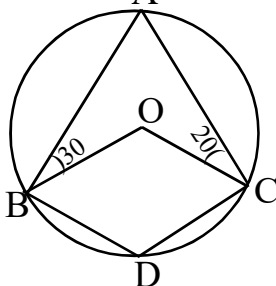
22. In the figure, ∠BDC=60⁰, ∠ACB=30⁰ and ∠CBD=45⁰.
    a) Find ∠BAC and ∠BAD.
    b) Find ∠ABC and ∠ADC.
    c) Find ∠BPC.
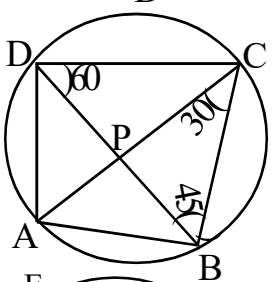
23. In the figure, ∠BAE=120⁰, ∠EPD=100⁰
    a) Find ∠BDE and ∠BCE.
    b) Find ∠DEC and ∠DBC
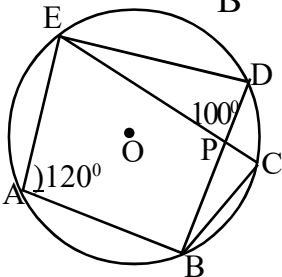
24. In the figure, O is the centre and ∠CAP=40⁰
    a) Find ∠ACP.
    b) Find ∠AOD.
    c) What is the central angle of the arc BMC.
    d) What is the sum of the central angles of the arcs ASD and MBC
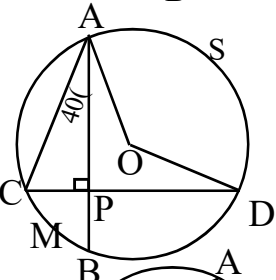
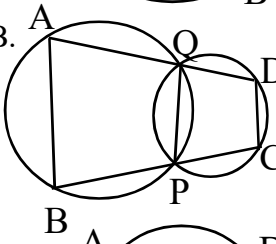25. In the figure, O is the centre and ∠AOB=80⁰
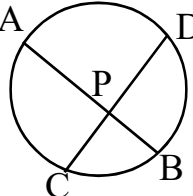   a) Find ∠ACB and ∠ADB.
    b) Find ∠ACP
    c) Prove that ∠P+∠CQD=∠AOB.
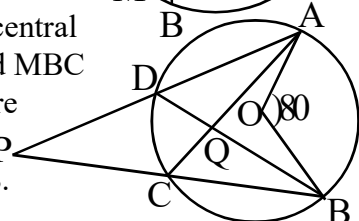
26. a) In the figure, ∠A=80⁰ then, check whether quadrilateral ABCD is cyclic.
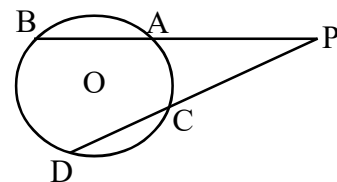   b) If ∠A=∠B then, prove that quadrilateral ABCD is cyclic.

27. In the figure, the chords AB and CD intersects at P. PA=10cm, AB=14cm and PC=5cm.
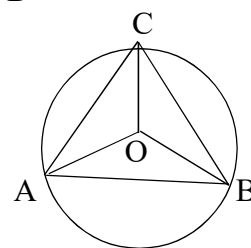   a) What is the length of PB?
    b) Find the lengths of PD and CD.

28. In the figure PA=3cm, AB=9cm, PC=4cm
    a) Find PB
    b) Find CD and PD.

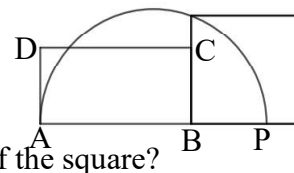29. a) In the figure,O is the centre of the circle ∠A=60⁰ ∠C=70⁰ .Find ∠BOC, ∠AOC and ∠AOB
    b) The vertices of a triangle are points on a circle of radius 3cm and two angles of this triangle are 70⁰ and 60⁰, draw the triangle.
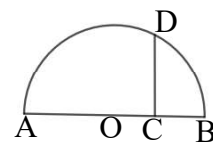
30. Circumradius of an equilateral triangle is 3.5 cm .Draw the triangle, Measure the length of its one side.

31. a) In the figure area of the rectangle ABCD is 12 square cms and BC=BP. What is the area of the square?
    b) Draw a rectangle of area 12 square centimetres. Draw a square having the same area of the rectangle.

32. In the figure, AB is a diameter and CD is perpendicular to the diameter. AC=6cm, AB=8cm.
    a) Find the length of CD.
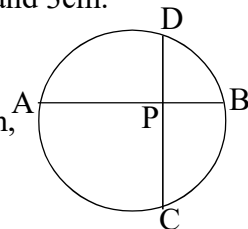   c) Draw a rectangle of area 12 square centimetres. Draw a square having the same area of the rectangle.

33. a) Draw a rectangle of sides 5cm and 3cm.
    b) Draw a square of same area.

34. Draw a line of length 2√6 cm

35. a) In the figure, PA=5cm, PB=3cm, PC=7cm, find the length of PD.
    b) Draw a rectangle with sides 5 cm and 3 cm. Draw another rectangle with same area and one side 7 cm.

36. Draw a circle and then construct an angle of 22 1/2⁰ without using protactor.

37. In the figure, ABCD is a rectangle, P,Q and R are the midpoints of the sides of ∆AEB. A point is marked in the figure without looking,
    a) What is the probability of that point is inside the ∆ABE?
    b) What is the probability of that point is inside the shaded triangle?
    c) What is the probability of that point is not in the shaded portion?
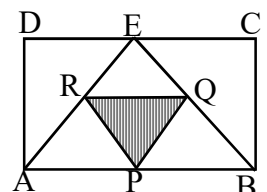
38. A box containing 6 red balls and 7 blue balls. A ball is drawn without looking.
    a) What is the probability of that ball is red?
    b) What is the probability of that ball is blue?
    c) One more red ball is put in the box, what will be the of getting a red ball?

39. What is the probability of 5 sundays in month January?

40. A box containing some 10 red and some white balls. A ball is drawn without looking, the probability of that ball is red is 2/3.
    a) What is the probability of that ball is white?
    b) What is the number of white balls?

41. A box contains paper slips numbered 1 to 30. A slip is drawn from this box without looking.
    a) What is the probability of that number is odd?
    b) What is the probability of that number is even?

42. A box contain paper slip numbered all two digit numbers. A slip is drawn from this box without looking.
    a) What is the probability of the digits are equal?
    b) What is the probability of product of the digits is a perfect square?

43. A box contain 6 red balls and 5 white balls. Another box contains 8 red and 4 white balls. One ball is drawn each box without looking.
    a) What is the number of possible pairs ?
    b) What is the probability of both balls are red?
    c) What is the probability of both balls are white?
    d) What is the probability of atleast one is red?

44. Sum of first 'n' odd numbers is 225. Find 'n' .

45. When all the side of a square decreased by 5cm, the area became 625cm^2,
    a) What is the side of the small square?
    b) What is the side of the large square?
    c) Find the area of the large square.

46. 4 is added to the sum of area and perimeter of a square gives 900.
    a) If the side of the square is x, Write its area and perimeter.
    b) Form a second degree equation.
    c) Find the side of the square.

47. x is a number.
    a) Which number is added to x^2+6x, for which this become a perfect square? b) If $x^2+6x=135$ then, find x.

48. Algebraic form of sum of an arithmetic sequence is n^2+8n. Sum of first some terms is 240.
    a) Form a second degree using the given data.
    b) How much terms should be added to get the sum 240?

49. If the product of two consecutive multiples of 8 is 384, find the numbers.

50. The perimeter of a rectangle is 40cm and its area is 84cm^2.
    a) What is the sum of length and breadth?
    b) Form a second degree equation.
    c) Find the length and breadth.

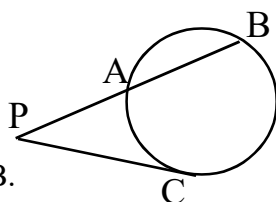51. In the figure, PC is a tangent, PC=12cm and AB=10cm.
    a) If PA=x then, find PB.
    b) Find the length of PA and PB.

52. Length of rectangle is 1cm more than 2 times of its breadth and its area is 78cm^2.
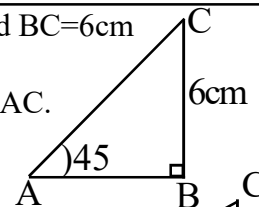   a) If the breadth is x then, write its length.
    b) Find the length and breadth.

53. In ΔPQR, ∠B=90^0 ∠A=45^{0}and BC=6cm
    a) Find ∠C.
    b) Find the lengths of AB and AC.

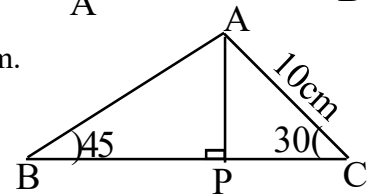54. In the figure, ∠B=90^0, ∠A=30^0 and BC=3cm.
    a) Find ∠C
    b) Find the length of AB and AC.
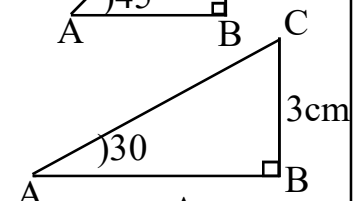
55. In the figure, AC=10cm.
    a) Find the lengths of AP and PC.
    b) Find the length of BP and AB.

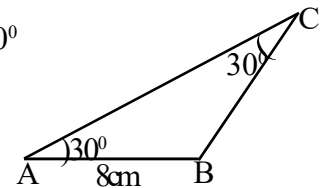56. In the figure, ∠A=∠C=30^0 and AB=8cm.
    a) Find ∠ABC.
    b) Find the lengths of BC and AC.
    c) What is the ratio of sides of this triangle?

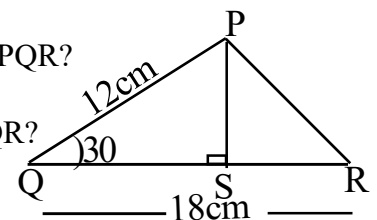57. In the figure, PQ=12cm, QR=18cm and ∠Q=30^0
    a) Find PS.
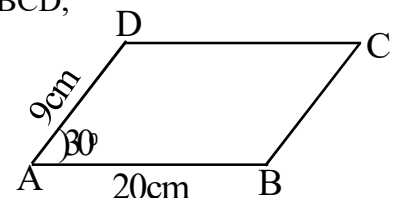   b) What is the area of ΔPQR?
    c) If ∠Q=150^0 then, What is the area of ΔPQR?

58. In the parallelogram ABCD, AD=9cm, AB=20cm and ∠A=30^0.
    a) What is the perpendicular distance from D to AB?
    b) What is the area of the parallelogram.
    c) If ∠A=60^0, What is the area of the parallelogram.

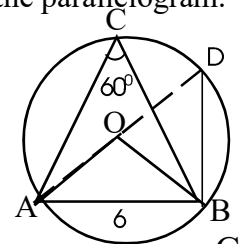59. In the figure, O is the centre, ∠ACB=60^0 and AB=6cm.
    a) Find ∠ADB and ∠ABD
    b) Find ∠AOB.
    c) What is the radius of the circle?

60. In the figure, ∠B=90^0, AB=5cm and AC=13cm.
    a)Find the length of BC.
    b) Find SinA, CosA and tanA
    c) Prove that SinA=CosC
    d) Prove that CosA.tanA=SinA

61. In the figure, ∠Q=90^0, SinP=4/5 and PR=10cm.
    a) Find the length of PQ and QR.
    b) Find CosP and CosR
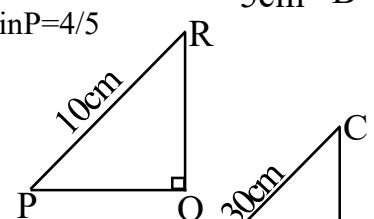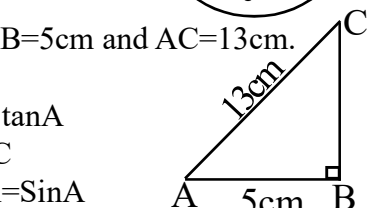
62. In ABC, ∠B=90^0, AC=30cm, ∠A=50^0, Find the lengths of AB and BC
    [Sin50=0.76, Cos50=0.64, tan50=1.2]
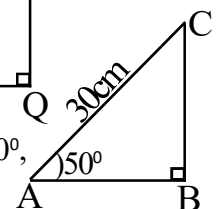
63. In the figure, ∠B=40°, AB=20cm and BC=25cm
    a) Find the length of AP.
    b) Find the area of ΔABC.
    c) Find the area of ΔABC if ∠B=140°
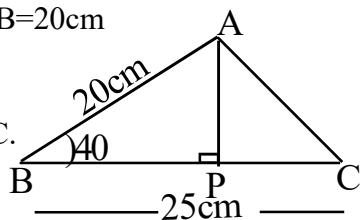
64. In ΔABC, AB=9cm, ∠C=65° and ∠B=50°
    a) What is the circum radius of the ΔABC?
    b) Find the length of AC
    [Sin65°=0.90, Cos65°=0.42, Sin50°=0.76, Cos50°=0.64]
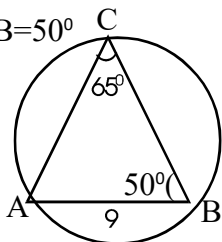
65. A ladder is leaned against a vertical wall of length 20m. Foot of the ladder make an angle 40° with the earth.
    a) What is the distance between the foot of the ladder and the wall?
    b) What is the length of the ladder?
    [Sin40°=0.64, Cos40°=0.76, tan40°=0.80]

66. A man standing some distance away from the foot of a building sees the top at angle of elevation 30°. After walking 40m towards the building, he sees the top at angle 60°
    a) Draw a rough figure.
    b) Find the height of the building.

67. A boy standing on the bank of a river sees the top of a tree on the other bank at an angle of elevation 54°. Stepping 20 metres back, he sees it at an angle of elevation 27°.
    a) Draw a rough figure.
    b) Find the height of the tree.
    c) Find the width of the river.
    (Sin 27 = 0.45, Cos 27 = 0.89, tan27 = 0.51, Sin 54 = 0.80, Cos 54 = 0.59, tan 54 = 1.38)

68. A man standing on the top of a light house of height 100 mtrs, sees a ship in the sea at an angle of depression of 22°.
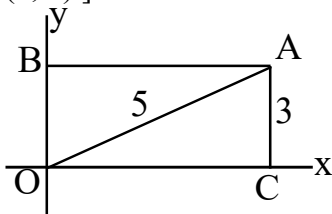   a) Draw a rough-sketch.
    b) How far is the ship from the light house?
    (Sin22°=0.37, Cos22°=0.92, tan 22°=0.4)

69. Write points belonged 'x' axis and 'y' axis.
    [(2, 2), (0, 3), (4, 0), (-5, 0), (1, 4)]

70. In the figure, OCAB is a rectangle, AC=3 unit and OA=5 unit.
    a) What is the coordinates of the point O?
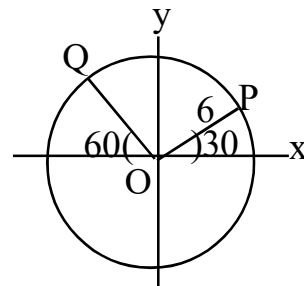   b) Find the coordinates of the points C , A and B.

71. a) Draw x,y axis and mark the following points. A(1, 0), B(7, 0), C(6, 4), D(2, 4).
    b) Draw the quadrilateral ABCD.
    c) Write the suitable name of this quadrilateral.
    d) Find the area of the quadrilateral ABCD.

72. In the figure, centre of the circle is origin and radius 6 unit.
    Find the coordinates of P and Q.

73. Consider the point A(1, 4)
    a) What is the coordinates of the point 4 unit away from A on x axis?
    b) What is the coordinates of the point 1 unit away from A on y axis?
    c) Find the coordinates of points 5units away from A on x axis.

74. Centre of a circle with radius 4 unit is (6,8). Check whether the following points inside or outside the circle.
    (10, 8), (6, 13), (0, 0), (1, -9)

75. A circle of radius 5unit with centre origin. Write coordinates of 4 points on this circle.

76. Centre of a circle is (6, 8) and a point on this circle is (16,8).
    a) Find the radius of this circle,
    b) Find the coordinates of the points at which this circle cuts the x axis.
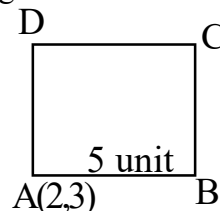
77. Sides of the rectangle are parallel to the axes. Coordinates of opposite vertices are (4, 8), (12,11)
    a) Find the coordinates of other vertices .
    b) Find the perimeter of this rectangle.

78. Sides of a square ABCD are parallel to the axes. A(2, 3), and AB =5 unit. Find the coordinates of the points B,C and D .

79. Find the length of sides and diagonals using the figure.
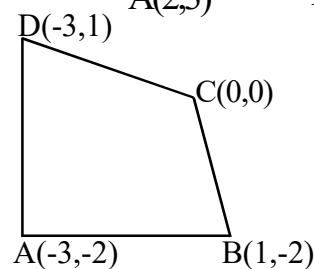
80. PQ is a tangent to the circle with centre O.
    a) Find ∠P.
    b) If ∠O=40°, What is ∠Q?

81. In the figure, O is the centre, PQ and PR are tangents. OP=13cm, OQ=5cm.
    a) What is the measure of ∠PQO?
    b) What is the length of the tangent PQ?
    c) What is the length of PR?
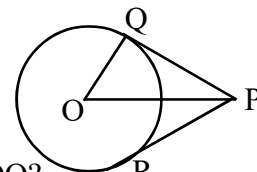
82. In the figure, O is the centre and AB is a tangent..
∠B=30⁰ and radius is 4cm.
a) What is ∠OAB?
b) Find the lengths of OB and AB
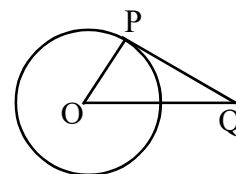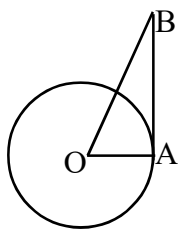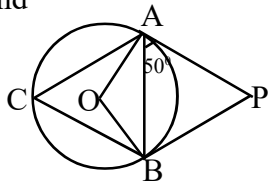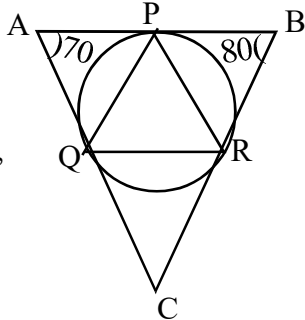
83. In the figure, O is the centre and PA, PB are tangents.
If ∠PAB=50⁰ then,
a) What is ∠C?
b) What is ∠PBA?
c) Find ∠P.

84. In the figure, sides of ∆ABC touches the circle at the points P,Q and R.
If ∠A=70⁰ and ∠B=80⁰ then,
a) Find all angles of ∆AQP.
b) Find all angles of ∆PQR.
c) Find all angles of ∆QRC.

85. In the figure, sides of ∆ABC touches the circle at the points P,Q and R.
a) If AB=8cm, QC=7cm and AC=11cm. Find the lengths of BP, PC and AR.
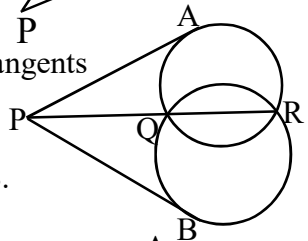b) If the perimeter of ABC is 30cm and AC=10cm then, find the length of BP.
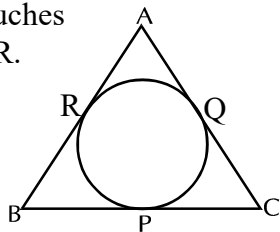
86. In the figure, sides of the quadrilateral ABCD touches the circle P,Q,R and S.
a) Prove that AB+CD=BC+AD.
b) If AP=2cm, BQ=5cm, CR=3cm and DS=4cm then, Find the perimeter of the quadrilateral ABCD.
c) If AB+CD=20cm then What is AD+BC? What is the perimeter ABCD?
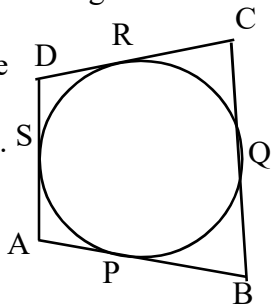
87. In the figure, PA is a tangent.
If BC=9cm and PB=3cm, then
a) Find the length of PC.
b) Find the length of PA.
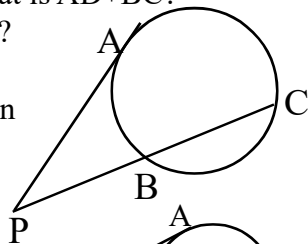
88. In the figure, PA and PB are tangents
a) Prove that PA=PB
b) If PQ=8cm, QR=10cm. Find the lengths of PA and PB.

89. In the figure, O is the centre, PA is a tangent and Q is the midpoint of AB. If the radius of the circle is r, then
a) What is ∠OAP?
b) Write a pair of equal angles ∆OQA and ∆PQA.
c) Prove that OP x OQ =r²
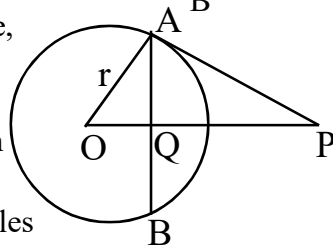
90. a) Perimeter of a triangle is 30cm and its inradius 3cm, then find its area.
b) If the area of a triangle is 18cm² and its perimeter 12cm. Find its inradius.
c) If the area and perimeter of a triangle are equal, then what is its inradius?

91. The incircle of △ABC touches the sides at P, Q and R as given in the figure. ∠B=90⁰, AP=6 cm, BQ=2cm and QC=4 cm.
a) Find the length of AC.
b) Find the inradius and area of △ABC.
c) Find the area of △ABC.
d) If the sides of triangle are 16cm, 12cm, 20cm find its inradius.
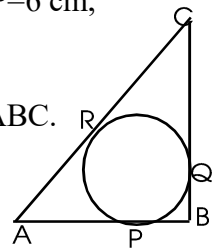
92. In the figure, O is the centre of the circle PQ is a tangent
a) Find ∠PAO
b) Draw a circle of radius 3cm. Mark a point A on the circle , Draw a tangent through A.
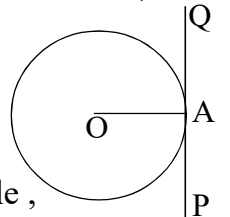
93. a) In the figure, O is the centre and PA and PB are tangents. Radius 3cm and PC=7cm find the lengths of PA and PB.
b) Draw a circle of radius 3 cm. Mark a point P at a distance 7 cm from the centre of the circle, Draw tangent from P to the circle.
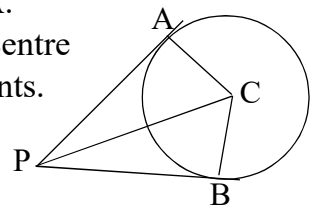
94. Draw a circle of radius 3cm. Mark a point P at a distance 6cm away from the centre. Draw tangents from P to the circle.

95. a) O is the centre of the incircle of triangle PQR. ∠AOB = 110⁰ Find all other angles of the quadrilateral AOQB ?
b) Two angles of a triangle are 50⁰ and 60⁰ and the radius of the incircle is 2 cm. Draw the triangle.
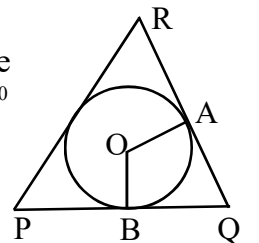
96. One side of an equilateral triangle is 5 centimetres. Draw the triangle and draw its incircle.

97. In triangle ABC, AB=6 cm, ∠A= 60⁰, ∠B=65⁰. Draw triangle ABC and construct its incircle and measure the inradius.

98. a) In the figure, PC is a tangent. PC=4cm and PB=7cm. Find PA.
b) Draw a squre of side 4cm and construct a rectangle of same area and a side 6cm.
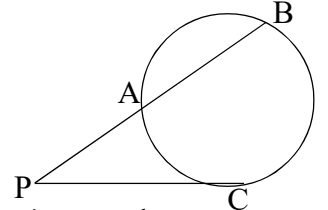
99. Base edge of a square pyramid is 10cm and lateral surface area is 260cm²
a) What s the total surface area of the pyramid?
b) Find the slant height and height of the pyramid.
c) Find the volume of the pyramid.

100. The figure shows paper cutouts to make a square pyramid
    a) What is the length of base edge of the pyramid?
    b) What is the slant height of the pyramid?
    c) What is the total surface area of the pyramid?

(figure: square pyramid net, 12cm base, 10cm slant)
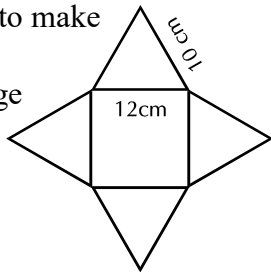
101. Lateral faces of a square pyramid are equilateral triangles with sides 10cm.
    a) What is the slant height of the pyramid?
    b) What is the lateral surface area and total surface area.

102. What is the radius and central angle of a sector needed to make a cone of radius 18cm and height 24cm?

103. From a circular sheet of radius 20cm, a sector of central angle 216^0 is cut out and made into a cone.
    a) Find the slant height and radius of the cone.
    b) What is the curved surface area and total surface area?
    c) What is the height of the cone?
    d) Find the volume of the cone.
    e) What would be the radius of the cone made rolling up the remaining sector

104. a) What is the relation between the radius and slant height of cone made by bending a semicircle?
    b) What is the radius and slant height of cone made by bending a semicircle of radius 10cm?
    c) What is the curved surface area?
    d) What is the total surface area of this cone?

105. Base area of a cone is $576\pi cm^2$ and volume is $1920\pi cm^3$.
    a) What is the height of the cone?
    b) What is the curved surface area of the cone?

106. Ratio of radii of two cones is 2:3 and ratio of their heights is 5:4.
    a) What is the ratio of their base perimeters?
    b) What is the ratio of their volumes?
    c) If the volume of the first cone is 500cm^3 then, what is the volume of the second cone?

107. Radius of a metalic cylinder is 12cm and height is 18cm. Melting this cylinder and recast into cone with radius 9cm. What is the height of this cone?

108. a) What is the volume of a metalic cylinder of radius 10cm and height 24cm?
    b) What is the volume of cone of maximum size is carved from this cylinder?
    c) What is the curved surface area of this cone?

109. a) What is the radius of the largest sphere that can be carved out from a cube of edge 12cm.
    b) Find the surface area and volume of this sphere.
    c) What is the volume of the cone of maximum size that can be carved out from a cube of edge 12cm.

110. Total surface area of solid sphere is 40cm². The sphere is cut in to two hemispheres. What is the flat surface area and curved surface area of the hemisphere?

111. Ratio of radii of two sphere is 2:3
    a) What is the ratio of their volumes?
    b) What is the ratio of their total surface areas?

112. The picture shows the shapeof a boiler. Total height of the boiler is 12m and the diameter is 6m, height of the cylindrical part is 6m
    (a) What is the height of the cone ?
    (b) How many litres can theboiler hold?
       (1m^3=1000litre.)

(figure: boiler shape)

113. A(1, 1), B(7, 1), C(8, 6), D(2, 6) are the vertices of the quadrilateral ABCD.
    a) Find the coordinates of midpoints the diagonals
    b) Prove that ABCD is a parallelogram.

114. A(2,4), B(4,3), C(8,8), and ABCD is a parallelogram
    a) Find the coordinates of D.
    b) A(2,0), B(8,0) and ABC is an equilateral triangle. Find the coordinates of C.
    c) Prove that A(4,5), B(8,8),C(16,14) are the points of a line.

115. a) What is the slope of the line joining the points (2, 4), (5, 8)?
    b) Write the coordinates of other two points on this line.
    c) Find the equation of the line.
    d) If (x, y) is point on this line then prove that (x+3, y+4) are also point on this line
    e) If x coordinate one point on this line is 17, What is the y coordinate of this point?

116. (5, 6) is a point on the line with slope 3/4.
    a) Find the coordinates other two points on this line.
    b) What is the slope of a line parallel to this line?

117. a) What is the slope of the line passing through the points (6,0) and (4,2)?
    b) Write the equatiion of the line?
    c) Write the coordinates of the point of intersection of the lines x+y=6 and x-y=4.
    d) Find the coordintes of the point of the line x+y=6 cuts x axis.

118. If A(3,2) and B(8,17) are two points
    a) If the P divides AB in the ratio 2:3 then, find the coordinates of P.
    b) Find the slope of this line.

119. Equation of a circle is $x^2+y^2=25$
    a) What is the radius of the circle?
    b) Write the equation of the circle whose centre is at the origin and radius is 3.

120. The coordinates of the end points of daimeter of a circle are (3,4) and (-3, -4).
    a) Write the coordinates of the centre of the circle?
    b) What is the radius of the circle?
    c) Write equation of the circle.

121. In the figure, O is the origin and A(8,0), B(0,6) are two points.
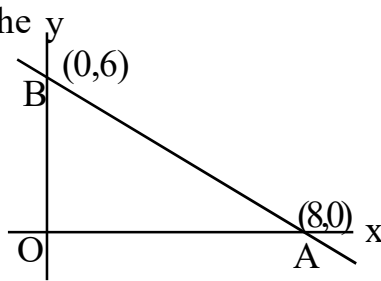
a) Write the coordinates of centre of the circle with AB as diameter.

b) Write the equation of the circle.

c) If one end of the diameter of this circle is the origin, write the coordinates of the other end of this diameter.

122. (5,5) is a point on a circle with centre (1,2)

a) Find the radius of the circle

b) Find the equation of the circle.

c) Find the radius and centre of the circle $(x-2)^2+(y-3)^2=81$

123 a) Find the coordinates of the centre and radius of the circle $x^2+y^2+4x-6y-12=0$

b) What are the coordinates of the points at which the circle cuts the x axis?

c) Write the coordinates another point on this circle.

124.. If $P(x)=2x^2-5x+2$, then

a) What number is P(0) and P(2)?

b) Write a first degree factor of P(x).

125. If x-2 is a factor of $4x^2-x+k$, then find k.

126. If $P(x) = 2x^2 -3x + 1$ then,

Find P (1), P (2), P (-3)

127. If $P(x)=2x^2-5x+1$,

a) Find P(3).

b) Does x-3 a factor of this polynomial.

c) If not which number is substracted from P(x) for which x-3 is a factor?

128. Write the following polynomial as the product of two first degree polynomials.

a) $x^2 - 1$ (b) $x^2 - 9$ (c) $x^2 - 4$

(d) $x^2 - (1/9)$, (e) $x^2 - 3$

129. If $P (x) = x^2 - 5x + 7$ then,

a) Find P (3) ,

b) Find P (x) - P (3)

c) Write P (x) - P (3) as the product of two first degree polynomials.

d) Find the solutions of the equation $x^2 - 5x + 6=0$

130. If $P(x) =3x^2-5x+7$, then

a) Find P(2).

b) Write a factor of P(x)-P(2)

d) Write P(x)-P(2) as the product of two first degree polynomials.

131. Scores awarded to 9 students for one subjects are given below. Find the mean and median.

15, 12, 25, 10, 3, 18, 17, 20, 6

132. Weights of 10 students in a school are given below. Find the mean and median. 35,39,32,36,40,30,34,37,38,33

133. Find mean and median of first 25 natural numbers.

134. The following table shows that classification of workers in a factory according to their daily wages

daily wages	400	500	600	700	800
Number	2	4	5	7	3

a) How many workers are there?

b) Workers are arranged according to their wages, What is the wage of 11th worker?

c) What is the median wage?

135. The table shows the details daily wages of workers in a factory

Daily Wages	Number of Workers
100–300	5
300–500	7
500–700	8
700–900	10
900–1100	13
1100–1300	7
1300–1500	3
Total	53

a) Workers are lined up according to their wages, which persons wage is assumed as median?

b) What is the wage of 21st person?

c) Find the median of the wages.