KHM HGHER SECONDARY SCHOOL, VALAKKULAM
SECOND TERMINAL EVALUATION – 2021
MATHEMATICS
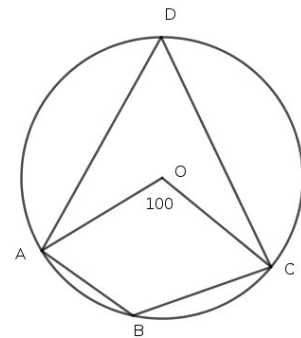
Max.Marks: 60   **STD: X**   **Time: 02.00 hrs**

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1) The algebraic expression of an arithmetic sequence is 5n +3
    a) Which is the first term ?
    b) What is the remainder when the terms are divided by 5 ?   (2mark)

2) A , B , C , D are the points on the circle with centre O. < AOC= 100°   (2mark)
    a) Find the measure of < ADC.
   b) What is the measure of < ABC ?

3) A bag contains 10 red and 8 blue balls. Take one ball from this.
    a) What is the probability of getting a red ball?
    b) What is the probability of getting a blue ball ?   (2mark)

4) In a right triangle, the measure of the Smallest angle is 30 and the length of the smallest side is 6 cm. Find the length of the other sides of
the triangle ?   (2mark)
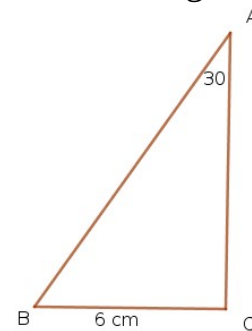
5) In the figure, 3 cm is the width of the rectangle OABC . Find the coordinates of the vertices B and C.   (2mark)
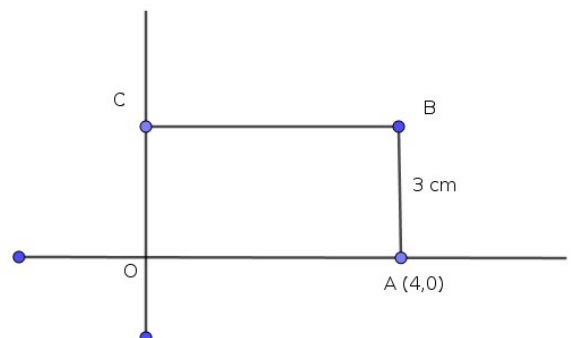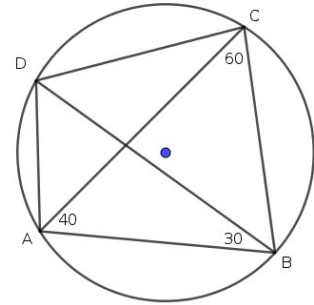
6. The 8th term of an arithmetic sequence is 32 and 15th term is 60.
     a) What is its common difference?
     b) What is its first term ?
     c) Is 100 a term in above series, why ?   (3mark)

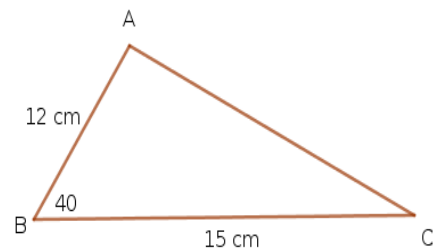7.Find the angles in the cyclic quadrilateral ABCD ?
                      (3 mark)

8.The sum of a number and square of the number gives 42. Find the number ?
                      (3 mark)

9.In Δ ABC,AB =12cm ,BC =15cm ,<B=40°
     a) Find the perpendicular distance from A to BC ?
     b) Find the area of Δ ABC ?
     (sin 40 =.6428 , cos 40 = .766 ,tan 40 = .8391)
                    (3 mark)

10.Draw the X, Y axes, and plot the points given below and join the points ?
(-2, 2) , (-1, 1), (0, 0), (1, -1), (2, -2).   (3 mark)

11) Draw a rectangle of sides 6cm and 4cm and draw a square of the same area.
                      (4mark)

12) In a box there are 8 black balls and 5 white balls and in another box, there are 6 black balls and 10 white balls.If one ball is taken from each box.
     a) What is the total number of possible pairs.
     b) What is the probability of both being black.
     c) What is the probability of getting one black and one white.
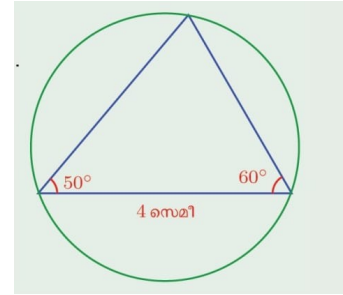   d) What is the probability of getting atleast one white.   (4mark)

13) The length of a rectangle is 3 cm more than its breadth.
     a) If the breadth is 'x' then what is its length ?
     b) If the area is 324 cm² ,form a second degree equation.
     c) Calculate the length and breadth.   (4mark)

14) The figure shows a triangle and its circumcircle

     a) Compute the diameter of the circle.
     b) Compute the length of the other two sides of the triangle.
     (sin 50 =.766,sin 70 =.9397,Cos 50=.6428 ,
cos 70=.342,tan   50=1.1918,tan70=2.7475)   (4mark)

15) One is asked to say a two digit number
     a) How many two digit numbes are there?
     b) What is the probability of getting a multiple of 5 ?
     c) What is the probability of getting a multiple of 10 ?
     d) What is the probability of one of the digit being zero and the other being a prime ?
                       (4 mark)

16) Consider the arithmetic sequence 3,5,7,9.....
     a) Find common difference ?
     b) Which term we get when we added four times common difference with first term ?
     c) Find tenth term?
     d) Write algebraic form of this sequence ?   (5 mark)

17) One of the perpendicular sides of a right angled triangle is 2 cm more than the other . If the length of hypotenuse is 10 cm.
Find the other sides ?   (5 mark)

18) A 1.6 meters tall boy saw the top of a building under construction at an elevation of 30°.The completed building was 10 metres higher and he saw its top an elevation of 60° from the same spot.
     a) Draw a rough figure based on the given details.
     b) What is the height of the building?   (5 mark)

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