MATHEMATICS ASSESSMENT WORKSHEET

GRADE:X   **MARK:80**

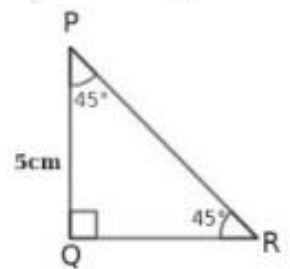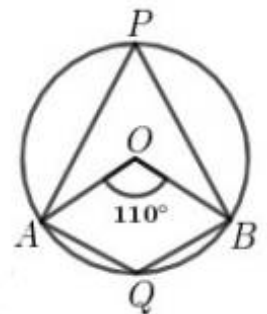   **TIME:2.5Hr**

For questions 1 to 5 one score each(Choose the correct answer from the bracket)

1. Which of the following is a term of the arithmetic sequence 23,33,43,……
   [78,93,62,44]

2. Which is always cyclic quadrilaterals
   [Parallelogram ,Square, Trapezium, Rhombus]

3. If 3, x ,13 are three consecutive terms of an arithmetic sequence ,the value of x
   [16 ,8 ,10,5]

4. How many tangents can we draw from a point outside the circle to the circle
   [4,3,2,1]

5. 5th term of an arithmetic sequence is 20 and its 10th term is 40, then its common difference is…
   [4,5,6,7]

Answer any five questions .Each questions carries 2 score

6. The algebraic form of an arithmetic sequence is 5 n + 3
   a) What is its common difference?
   b) What is its first term ?

7. In the figure O is the centre of the circle . < AOB = 110^{0}
   a) What is the measure of < APB ?
   b) What is the measure of < AQB ?

8. . 1 added to the product of two consecutive odd numbers gives 256
   What are the numbers ?

9. In ΔPQR ,<Q=90^{0},<R=45^{0} and PQ=5cm
   a)What is the length of QR?
   b) What is the length of PR?

10. A box contains 6 black and 4 white balls, if a ball is taken from it
    a)What is the probability of it being black?
    b) What is the probability of it being white?

11. There is a point 13 cm away from the centre of a circle of radius 5 cm. A tangent is drawn through that point.
    a) What is the angle between a tangent at a point and the radius through that point?
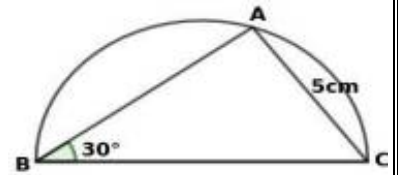   b) What is the length of the tangent ?

Answer any five questions .Each questions carries 3 score

12. Consider the arithmetic sequence 1 ,6, 11, …….. .
    a) What is its common difference ?
    b) What is its 20th term ?
    c) What is its algebraic form ?

1

13.a) Which number is to be added to $x^2 + 12x$ to get a perfect square ?

    b) Find the natural number value of x from the equation $x^2 + 12x = 64$

14. Each letter of the word " STATEMENT " is written on paper slips and put in a box . A slip is to be drawn from it .

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

    b) What is the probability of not getting the letter T ?

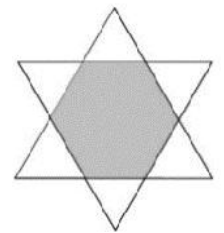15. In the figure ,BC is diameter of the semi circle $<B=30^0 AC=5$ cm

    a)What is the measure of <BAC.?

    b) What is the radius of the semicircle?

16. The vertices of a triangle are A(1,9) ,B(4,6) and C(3,11)

    a)What is the length of AB

    b)What is the length of BC

    c)Prove that ABC is a right triangles

17. A regular hexagon is formed by two overlapping equilateral triangles as shown in the figure. A fine dot is placed into the figure without looking into it .

    What is the probability of being the dot inside the shaded region ?
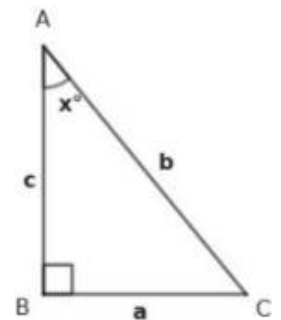
Answer any five questions .Each questions carries 4 score

18. Find the following sums.

    a) $1 + 2 + 3 + 4 + 5 + \ldots \ldots + 15$

    b) $2 + 4 + 6 + 8 + 10 + \ldots \ldots + 30$

    c) $5 + 7 + 9 + 11 + 13 + \ldots \ldots + 33$

    d)$8 + 13 + 18 + 2 \ 3 + 28 + \ldots \ldots + 78$

19. Draw a triangle of circumradius 4cm and two angles 50^0 and 60^0

20. In $\triangle ABC, <B=90^0, <A=x^0$,Length of sides BC,CA and AB are a,b,c respectively

    a)Which among the following is $\tan x^0$

    $[\frac{c}{a}, \frac{a}{c}, \frac{c}{b}, \frac{a}{b}]$

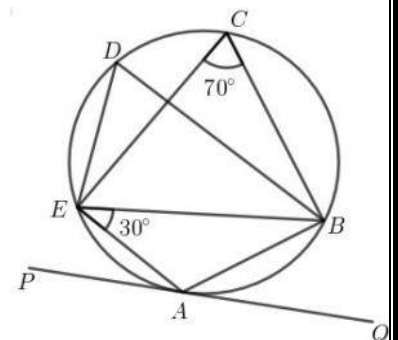   b)Write $\sin x^0$ and $\cos x^0$ from $\triangle ABC$

    c)Prove that $\frac{sinx}{cosx} = \tan x$

21.a) Draw the coordinate axes and mark the following points.

    A (2 , 4) , B (-1 , 3) , C (- 1, - 1) , D (2, -3) ?

    b) What is the most suitable name of the quadrilateral ABCD ?

22. In the figure PQ is a tangent . BE = CE < AEB = 30^0 , < BCE= 70^0

    a) What is the measure of < BDE ?

    b) What is the measure of < BAE ?

    c) What is the measure of < BAQ ?

    d) What is the measure of < PAE ?

23. The sum of first n terms of an arithmetic sequence is n^2+2n
    a) What is the first term?
    b) Find the common difference.
    c) What is the sum of continuous term starting from the first of the sequence
    3,5,7…..added to 1 gives a perfect square

Answer any six questions .Each questions carries 5 score

24. Look at the number pattern given below

    1

    2   3
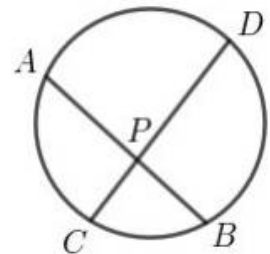
    4   5   6

    7   8   9   10

    ………………………………

    ………………………………………

    a) Write down the next two more lines of this pattern?
     b) How many numbers are there in the 12th line ?
    c) What is the last number in the 11th line ?
    d) What is the first number in the 12th line ?
    e) What is the sum of the numbers in the 12th line ?
25. Draw a rectangle of width 5 cm and height 3 cm. Draw a square of the same area
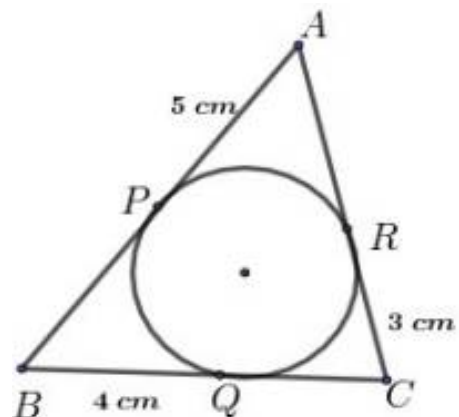26. In the figure two chords AB and CD intersect at P .
    PA = 8 cm , AB = 14 cm , PD = 12 cm
     a) What is the length of BP ?
     b) PC x PD = ………………
    c) What is the length of PC ?

27. The perimeter of a rectangle is 28 cm and its diagonal is 10 cm .
    a) What is the sum of its width and height ?
    b) If the width is taken as 7+x , then the height = --------
    c) What are the length of its sides ?
28. In the figure , the circle touches the sides of the triangle ABC at the points P , Q , R .
     AP = 5 cm , BQ = 4 cm ,CR = 3 cm .
    a) What is the length of AR ?
    b) What is the length of BC ?
    c) What is the perimeter of the triangle ABC ?

29. A man standing away from the bottom of a tower sees its top at an angle of elevation of 60^0 .

Standing back by 100 metres, he sees it an angle of elevation of 30^0 .

a) Draw a rough figure based on the given details

b) What is the height of the tower?

30. The sum of 1st and 20th terms of an arithmetic sequence is 88

a) What is the sum of 2nd and 19th terms

b) If 10th terms is 42, what is the 11th terms?

c) What is the common difference of the sequence?

d) What is the first term?