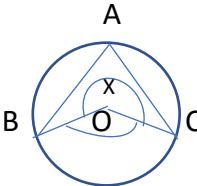
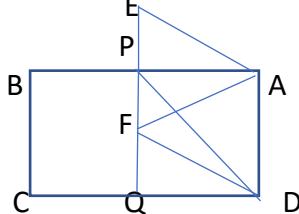


ST.THOMAS SCHOOL,INDIRAPURAM
CLASS-IX, WORKSHEET
JANUARY (2020)
DATE OF SUBMISSION- 24-01-2020

1.	In the adjoining figure O is the centre of the circle, $\angle BAC = 50^\circ$ Find x and $\angle BOC$
	
2.	Prove that the angle subtended by an arc at the centre is double the angle subtended by it at any point on the remaining part of the circle.
3.	Solid spheres of diameter 4cm are dropped into a cylindrical beaker containing some water and are fully submerged. If the diameter of the beaker is 12cm and the water rises by 24cm, find the number of solid spheres dropped in the water.
4.	A cylindrical roller 2.5m in length, 1.5m in radius when rolled on the road was found to cover the area of 16500m^2 . How many revolutions does it make?
5.	For what value of k the mode of the following data is 7? 3, 5, 6, 7, 5, 4, 7, 5, 6, (k + 1), 8, 7
6	The diameter of sphere is decreased by 25%. Find the new volume.
7.	ABCD and AEFD are two parallelograms. Prove that
i) $PE = FQ$) ii) $\text{ar.}(\Delta PEA) = \text{ar.}(\Delta QFD)$ iii) $\text{ar.}(\Delta APE) : \text{ar.}(\Delta PFA) = \text{ar.}(\Delta QFD) : \text{ar.}(\Delta PFD)$	
8.	The perimeter of a triangular park is 300cm and its sides are in the ratio $5 : 12 : 13$. Find the length of the perpendicular from the opposite vertex to the side whose length is longest
9.	From a right circular cylinder with height 10cm and radius of base 6cm, a right circular cone of the same height and base is removed. Find the volume of the remaining solid.
10.	Cards with numbers 1,2,3,4.....100 are placed in a box and mixed thoroughly and one card is drawn, what is the probability that the card drawn is i) a prime number less than 30 ii) a multiple of 5 or 7 iii) a composite number
11.	If both $(x - 2)$ and $(x - \frac{1}{2})$ are factors of $px^2 + 5x + r$, Show that $p = r$

12.	Simplify: — $\frac{1}{\sqrt{2}+1} + \frac{1}{\sqrt{3}+\sqrt{2}} + \frac{1}{\sqrt{4}+\sqrt{3}} + \dots + \frac{1}{\sqrt{9}+\sqrt{8}}$														
13.	Draw the graph of the equations $x - y = 1$ and $2x + y = 8$. Shade the area bounded by these two lines and y-axis. Also determine the area of shaded region.														
14.	Construct a triangle PQR whose perimeter is equal to 14cm, $\angle P = 45^\circ$ and $\angle Q = 60^\circ$														
15.	Prove that the quadrilateral formed by the internal angle bisectors of any quadrilateral is cyclic.														
16.	If two chords of a circle are equally inclined to the diameter passing through their point of intersection, prove that the chords are equal.														
17.	Draw a frequency polygon for the following data:- <table border="1"> <thead> <tr> <th>Marks</th> <th>No. of students</th> </tr> </thead> <tbody> <tr> <td>140 - 150</td> <td>5</td> </tr> <tr> <td>150 - 160</td> <td>10</td> </tr> <tr> <td>160 - 170</td> <td>20</td> </tr> <tr> <td>170 - 180</td> <td>9</td> </tr> <tr> <td>180 - 190</td> <td>6</td> </tr> <tr> <td>190 - 200</td> <td>2</td> </tr> </tbody> </table>	Marks	No. of students	140 - 150	5	150 - 160	10	160 - 170	20	170 - 180	9	180 - 190	6	190 - 200	2
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140 - 150	5														
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170 - 180	9														
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190 - 200	2														
18.	If the surface area of sphere is 98.56cm^2 . Find the radius of sphere.														
19.	How much area of triangle will increase in percentage, if each side of the triangle is doubled?														
20.	A park in the shape of a quadrilateral ABCD, has $\angle C = 90^\circ$, AB = 9m, BC = 12m, CD = 5m and AD = 8m. How much area does it occupy?														

