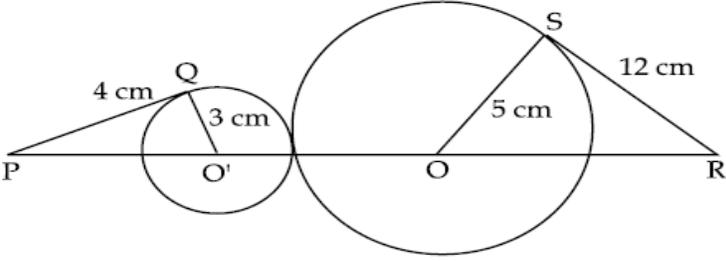
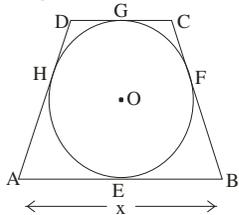


Q.6	A solid toy is in the form of a hemisphere surmounted by a right circular cone. Height of the cone is 2 cm and diameter of base is 4 cm. If a right circular cylinder circumscribes the solid, find how much more space it will cover. (a) $4\pi\text{cm}^3$ (b) $6\pi\text{cm}^3$ (c) $8\pi\text{cm}^3$ (d) $\frac{16}{3}\pi\text{cm}^3$. Ans d
Q.7	The point of intersection of medians of a triangle whose vertices are (-1,0), (5,-2) and (8,2) is (a) (4,0) (b) $(-8, \frac{4}{3})$ (c) $(\frac{4}{3}, 8)$ (d) $(\frac{4}{3}, -8)$ Ans a
Q.8	A quadrilateral ABCD is drawn to circumscribe a circle. If AB = 5CM, CD = 9CM, BC = 8CM, the AD = (a) 7cm (b) 6cm (c) 5cm (d) 4cm Ans b
Q.9	In Fig. 3, the length of PR is :  Fig. 3 (A) 20 cm (B) 26 cm (C) 24 cm (D) 28 cm Ans b
Q.10	The probability of guessing the correct answer to certain question is $\frac{p}{12}$. If the probability of not guessing the correct answer to same question is $\frac{3}{4}$, the value of p is : (A) 3 (B) 4 (C) 2 (D) 1 Ans. A
SECTION - B	
Q.11	Prove that the perpendicular at the point of contact to the tangent to a circle passes through the centre.
Q.12	Determine 'a' so that $2a + 1$, $a^2 + a + 1$ and $3a^2 - 3a + 3$ are consecutive terms of an A.P. Ans : a = 1, 2 For terms to be in A.P. $a^2 + a + 1 - (2a + 1) = 3a^2 - 3a + 3 - (a^2 + a + 1)$ 1 or $a^2 - 3a + 2 = 0$ 1 $\Rightarrow a = 1$ or $a = 2$ 1
Q.13	A chord of a circle of radius 12cm subtends an angle of 120° at the centre. Find the area of the corresponding segment of the circle. Ans $36\sqrt{3}$ OR Three cubes of a metal whose edges are in the ratio 3:4:5 are melted and converted into a single cube whose diagonal is $12\sqrt{3}$ cm. find the edges of the three cubes. Ans a = $12x = 2, 6, 8, 10$
Q.14	If PA and PB are two tangents from external point P to a circle with centre O and $\angle APB = 35^\circ$, find the angle OAB. Ans 145°
Q.15	A box contains cards bearing numbers from 6 to 70. if one card is drawn at random from the box, find the probability that it bears. (i) a one digit number (ii) a number divisible by 5. Ans (i) $\frac{4}{65}$ (ii) $\frac{1}{5}$
Q.16	In the following A.P. find the missing terms -4, *, *, *, *, 6 Ans 2, 0, 2, 4
Q.17	Determine the ratio in which the line $3x + 4y - 9 = 0$ divides the line segment joining the points (1,3) and (2,7). Ans 6:25
Q.18	Solve for x: $12abx^2 - (9a^2 - 8b^2)x - 6ab = 0$ Ans $\left\{ \frac{3a}{4b}, \frac{-2b}{3a} \right\}$
SECTION - C	

<p>Q.19</p>	<p>A sphere of diameter 6 cm is dropped in a right circular cylindrical vessel partly filled with water. The diameter of the cylindrical vessel is 12 cm. If the sphere is completely submerged in water, by how much will the level of water rise in the cylindrical vessel ? Ans WATER LEVEL RAISED BY 1 CM .</p> <p style="text-align: center;">OR</p> <p>If h, c and V respectively are the height, the curved surface and volume of cone, prove that $3\pi vh^3 - c^2h^2 + 9v^2 = 0$.</p>
<p>Q.20</p>	<p>In a simultaneous throw of a pair of dice, find the probability of getting (i) 8 as the sum (ii) a doublet (iii) a doublet of prime numbers (iv) a doublet of odd numbers (v) a sum greater than 9 (vi) an even number on first (vii) an even number on one and a multiple of 3 on the other (viii) neither 9 nor 11 as the sum of the numbers on the faces (ix) a sum less than 6 (x) a sum less than 7 (xi) a sum more than 7 (xii) different number of both die . ans (i) $\frac{5}{36}$ (ii) $\frac{1}{6}$ (iii) $\frac{1}{12}$ (iv) $\frac{1}{12}$ (v) $\frac{1}{6}$ (vi) $\frac{1}{2}$ (vii) $\frac{11}{36}$ (viii) $\frac{5}{6}$ (ix) $\frac{5}{18}$ (x) $\frac{5}{12}$ (xi) $\frac{5}{12}$</p>
<p>Q.21</p>	<p>Find the area of the quadrilateral whose vertices in order are A(-5,-3), B(-4,-6), C(2,-1) and D(1,2). Ans 23 sq. units</p>
<p>Q.22</p>	<p>The sum of three terms of an A.P. is 21 and the product of the first and the third terms exceeds the second term by 6, find three terms. Ans 1, 7, 13</p> <p style="text-align: center;">OR</p> <p>How many terms of the series 54, 51, 48, ... be taken so that their sum is 513 ? Explain the double answer. Ans n = 18 or 19 Explanation :- Sum of 18 term is equal to sum of 19 term because 19th term is zero .</p>
<p>Q.23</p>	<p>In the given figure, quadrilateral ABCD is circumscribing a circle with centre O. Find x</p> <div style="text-align: center;">  </div> <p>if GC = 3 cm, BC = 7 cm, AH = 5 cm and AB = x cm. Ans 9cm</p>
<p>Q.24</p>	<p>Find the coordinates of the points which divide the line segment joining the points (-8, 0) and (4,-8) in four equal parts . Ans (-5,-2),(-2,-4), (1,-6)</p>
<p>Q.25</p>	<p>A boy is standing on the ground and flying a kite with a string of length 150 m at an angle of elevation of 30°. Another boy is standing on the roof of a 25 meter height building and is flying his kite at an elevation of 45°. Both the boys are on opposite side of both the kites . Find the length of string correct to two decimal places that the second boy must have so that the two kites meet . Ans length of string = 70.71m</p>
<p>Q.26</p>	<p>The co-ordinates of A,B,C are (6,3), (-3,5) and (4,-2) respectively and P is any point on (x,y). show that the ratio of the areas of triangles PBC and ABC is $\left \frac{x+y-2}{7} \right$.</p>
<p>Q.27</p>	<p>Prove that the parallelogram circumscribing a circle is a rhombus.</p>
<p>Q.28</p>	<p>A pen stand made of wood is in the shape of a cuboid with four conical depressions to hold pens. The dimensions of the cuboid are 15 cm by 10 cm by 3.5 cm. The radius of each of the depressions is 0.5 cm and the depth is 1.4 cm. Find the volume of wood in the entire stand. Ans 523.53cm³</p> <p style="text-align: center;">OR</p> <p>Water is being pumped out through a circular pipe whose internal diameter is 7 cm. If the flow of water is 72cm per second, how many litres of water are being pumped out in one hour ? Ans volume of water flow out per hour = 9979200 cubic cm = 9979.2 liters</p>

SECTION – D

Q.29	Draw a pair of tangents to a circle of radius 5 cm which are inclined to each other at an angle of 60° .
Q.30	A balloon moving in a straight line, passes above two points A and B on the ground. When it is vertically above point A, its angle of elevation at point B is found to be 60° . When it is vertically above point B, its angle of elevation as observed from A is found to be 45° . Points A and B are 1000 m apart. Find the distance of the point from A, where it touches the ground. Ans 2366meter
Q.31	The first term of an A.P. is unity and the ratio of the sum of the first five terms to the sum of the next five terms is 9 : 29. Find the A.P. Ans 1,5,9.....
Q.32	A tent is in the shape of a right circular cylinder upto a height of 3m and conical above it. The total height of the tent is 13.5m and radius of base is 14m. Find the cost of cloth required to make the tent at the rate of ₹ 80 per sq. m. Ans $l = 17,5m; A = 1034m; cost = 82720Rs$ OR The radii of circular ends of a solid frustum of a cone are 33cm and 27cm and its slant height is 10cm. Find its total surface area. Ans $7599.4cm^2$
Q.33	The area of an equilateral triangle is $49\sqrt{3} cm^2$. taking each vertex as centre; a circle is drawn with radius equal to half the length of the side of the triangle. Find the area of the triangle not included in the circles. Ans Required area $= \left\{ 49\sqrt{3} - 3 \left(\frac{60}{360} \times \frac{22}{7} \times 7^2 \right) \right\} = \{ 49\sqrt{3} - 77 \} = 7.77cm^2$
Q.34	Two water taps together can fill a tank in $9\frac{3}{8}$ hours. The larger tap takes 10 hours less than the smaller one to fill the tank separately. Find the time in which each tap can separately fill the tank. Ans $\frac{1}{x} + \frac{1}{x+10} = \frac{8}{75}$; 25 hours OR A shopkeeper buys a number of books for ₹ 80. If he had thought 4 more books for the same amount, each book would have cost ₹ 1 less. How many books did he buy? Ans $\frac{80}{x} - \frac{80}{x+4} = 1$; 16Books
	_____x_____
BELIEVE ONE WHO HAS PROVED IT. BELIEVE AN EXPERT.	