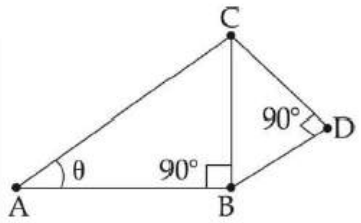
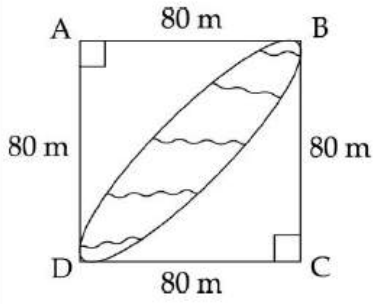
SUMMATIVE ASSESSMENT – II
MATHEMATICS Class – X

1	Find the sum of first 15 multiples of 8 ?	1
2	In figure AB=$10\sqrt{3}$ cm, DC=8 cm and BD=6 cm, then find θ. 	1
3	Cards marked with numbers 3 to 79 are placed in a box and mixed thoroughly. One card is drawn from the box. What is that probability that the number on the card is odd ?	1
4	If (1, 2), (4, 3), (x, 6) and (3, 5) are the vertices of a parallelogram taken in order find value of x.	1
5	Find the middle term of the AP : $-11, -7, -3, \ldots\ldots, 45$.	2
6	The product of two consecutive positive integers is 380. Formulate the quadratic equation whose roots are these integers.	2
8	To divide a line segment AB in the ratio 5 : 9, first a ray AX is drawn so that $\angle BAX$ is an acute angle. Find the minimum number of points A_1, A_2, A_3, etc, which will be marked at equal distances on the ray AX and the point which will be joined with B.	2
9	If PA and PB are two tangents drawn to a circle with centre O, from an external point P such that PA = 2.8 cm and $\angle APB = 60°$. Find the length of chord AB.	2
10	The difference between the circumference and the diameter of a circle is 30 cm. Find the radius of the circle $\left(\text{Use } \pi = \frac{22}{7}\right)$.	2
11	How many terms of the AP : 54, 51, 48, ... must be taken so that their sum is 513 ? Explain the double answer.	3
12	Solve for a : $(a-2)+\frac{1}{a-2}=3\,;\, a \neq 2$	3
14	From the top of a 7 m high building, the angle of elevation of the top of a cable tower is 60° and the angle of depression of its foot is 45°. Determine the height of the tower.	3
15	A number is selected from the numbers 2, 3, 3, 5, 5, 5, 7, 7, 7, 7, 9, 9, 9, 9, 9 at random. Find the probability that the selected is : (i) their median (ii) their mode.	3
16	The length of a line segment is $\sqrt{10}$ units. If one end is at (2, −3) and the abscissa of the second end is 5, show that its ordinate is either −2 or −4.	3
17	If the distance of P(x, y) from A(6, 2) and B(−2, 6) are equal, prove that $y = 2x$.	3
18	A glass is in the shape of a cylinder of radius 7 cm and height 10 cm. Find the volume of juice in litres required to fill 6 such glasses. (Use $\pi = \frac{22}{7}$)	3
19	Find the areas of the segment of a circle of radius 21 cm and corresponding central angle 30°.	3

20	A medicine capsule is in the form of a cylinder with two hemispherical ends. The radius of the capsule is 3.5 mm and length of the capsule is 12 mm. Find its total surface area. (Use $\pi = \frac{22}{7}$)	3
21	How many terms are there in an AP whose first term and 6^{th} term are -12 and 8 respectively and sum of all its terms is 120 ?	4

23. Find the root of quadratic equation $4x^2 + 4bx - (a^2 - b^2) = 0$ by the method of completing perfect square

24. The two tangents drawn to a circle with centre O from an external point P . If OP is equal to diameter of circle, show that triangle APB is equilateral.

25	Construct a pair of tangents PQ and PR to a circle of radius 4 cm from a point P outside the circle 8 cm away from the centre. Measure PQ and PR.	4
26	A person standing between two posts, finds that the angle subtended at his eyes by the tops of the posts is a right angle. If the heights of the two posts are two times and four times the height of the person and the distance between the two posts is equal to the length of the longer post, find the ratio of the distances of the person from the shorter to the longer post.	
27	Explain the error in each of the following statement (i) The probability that Dilip will pass the competitive examination is 0.8 and not able to pass is -0.2 (ii) The probability our school team will win the badminton match is 0.67, lose the game is 0.31 and probability of tie is 0.05 (iii) The probability that Seema will get A grade is 0.60 and Seema will get atleast B grade is 0.48	4
28	Find the ratio in which the line segment joining the points A(2, $-$ 2) and B(3, 7) is divided by the line $2x + y - 4 = 0$.	4
29	Water is flowing at the rate of 15 km/h through a pipe of diameter 14 cm into a cuboidal pond which is 50 m long and 44 m wide. By what level water will rise in $\frac{2}{3}$ hours of time ?	4
30	A square park has a flower bed designed in between. Calculate the area of the bed shown in the given figure common between the two quadrants of two circles of radius 80 m each.  	4
31	Two types of water tankers are available in a shop at the same price One is in a cubical form of dimensions 1m $\times$ 1m $\times$ 1m and another is in a cylindrical form of diameter 1 m^3 and height is also 1 m. Calculate the volumes of both tankers. The shopkeeper advises to purchase cubical tanker Why ? (Use π = 3.14)	4