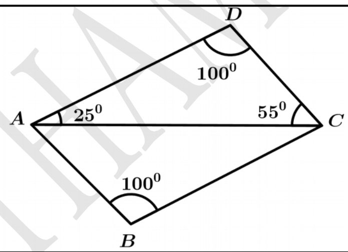
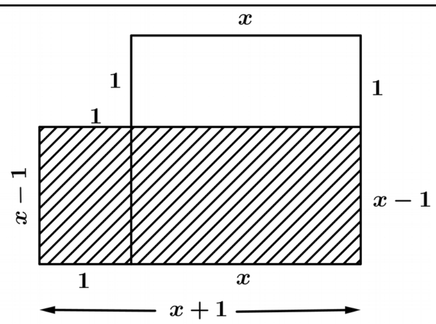
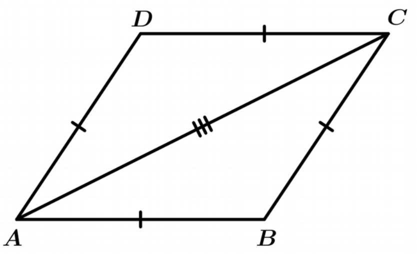
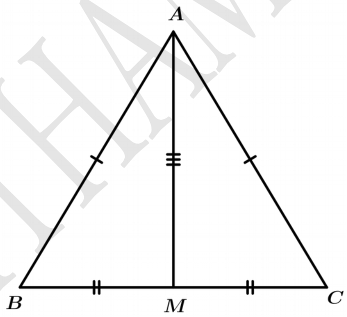
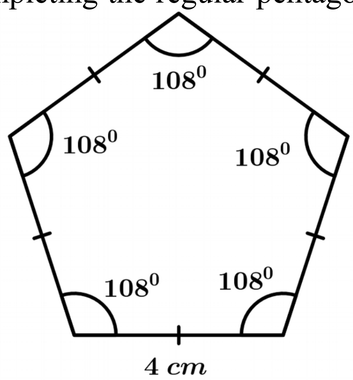
SUMMATIVE ASSESSMENT – TERM I 2025 – 26

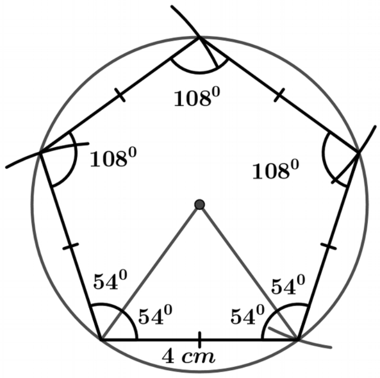
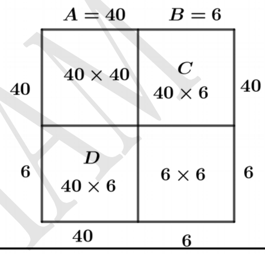
Class : VIII

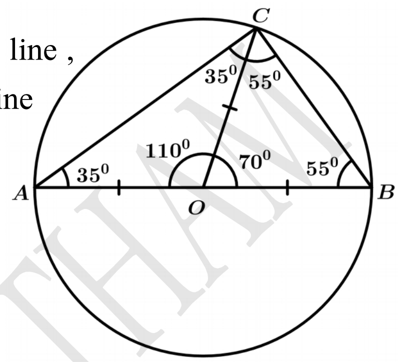
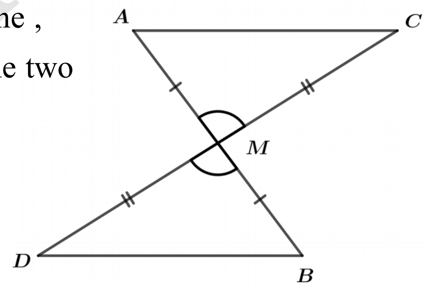
MATHEMATICS – ANSWER KEY

E-803

Qn no	Key	Score
	SECTION A	
1	A. $10 \times 3 \times 2$ $\quad \left[(10+3)^2 = 10^2 + 10 \times 3 \times 2 + 2^2\right]$	1
2	A. Statement I is true , Statement II is false .	1
3	D. 151.29 $\quad \left[(12.3)^2 = \left(\frac{123}{10}\right)^2 = \frac{15129}{100}\right]$	1
4	D. i , iv	1
	SECTION B	
5	(i) $\angle ADC = 180 - 25 - 55 = 180 - 80 = 100^0$ [Sum of the angles of the triangle ADC] (ii) $\angle ABC = 100^0$ [$\angle ABC = 100^0$, Opposite angles of a parallelogram are equal]  	1 1
6	(i) $\left[2\frac{1}{2}\right]^2 = \left[2+\frac{1}{2}\right]^2 = 2^2 + 2 \times 2 \times \frac{1}{2} + \left(\frac{1}{2}\right)^2 = 2^2 + 2 + \left(\frac{1}{2}\right)^2 = 2^2 + 2 + \frac{1}{4}$ (ii) $\left[7\frac{1}{2}\right]^2 = \left[7+\frac{1}{2}\right]^2 = 7^2 + 2 \times 7 \times \frac{1}{2} + \left(\frac{1}{2}\right)^2 = 7^2 + 7 + \frac{1}{4} = 56 + \frac{1}{4}$	1 1
7	Yes . $3600^0 = 20 \times 180^0$. Sum of the angles of any polygon is a multiple of 180^0 . [The sum of the angles of a polygon is 180° multiplied by two less than the number of sides]	1 1
8	Sum of the measures of two small angles $= 180 - 90 = 90^0$ Each small angle $= \frac{90}{2} = 45^0$ [If two sides of a triangle are equal , then their opposite angles are also equal]	1 1
	SECTION C	
9	(i) Larger side of the rectangle $= x + 1$ Smaller side of the rectangle $= x - 1$ (ii) Area of the shaded rectangle $= (x+1)(x-1) = x^2 - 1^2 = x^2 - 1$ (iii) Square has more area . [Area of the rectangle $= x^2$]  	1 1 1
10	(i) Measure of one outer angle $= 180 - 135 = 45^0$ (ii) Sum of the outer angles $= 360^0$ Number of sides $= \frac{360}{45} = 8$	1 1 1

11(A)	In the figure, AB = DC = AD = BC . Since ABC is an isosceles triangle , ∠ ACB = ∠ BAC . [AB = AC , If two sides of a triangle are equal , then their opposite angles are also equal] Since ADC is an isosceles triangle ∠ CAD = ∠ ACD . [AD = DC]  Since the lengths of the sides of triangles ABC and ADC are the same, they are equal triangles . [AB = AD , BC = DC , AC is the common side] ∠ ACB = ∠ ACD , ∠ BAC = ∠ CAD [The angles opposite to sides of equal length of equal triangles are also equal]	1 1 1
11(B)	In triangle ABC , AB = AC Take the midpoint of the side BC as M , then BM = CM. Since the lengths of the sides of the triangles AMB and AMC , they are equal triangles. . [AB = AC , BM = CM , AM is the common side] ∠ B = ∠ C [The angles opposite to sides of equal length of equal triangles are also equal]  	1 1 1
12(A)	(i) $36^2 = (35+1)^2 = 35^2 + 2 \times 35 \times 1 + 1^2 = 1225 + 70 + 1 = 1296$ (ii) $33^2 = (35-2)^2 = 35^2 - 2 \times 35 \times 2 + 2^2 = 1225 - 140 + 4 = 1089$	1 2
12(B)	(i) $9^2 = 5^2 - 4^2$ (ii) $15 = 15 \times 1 = \left(\frac{15+1}{2}\right)^2 - \left(\frac{15-1}{2}\right)^2 = \left(\frac{16}{2}\right)^2 - \left(\frac{14}{2}\right)^2 = 8^2 - 7^2$ $15 = 5 \times 3 = \left(\frac{5+3}{2}\right)^2 - \left(\frac{5-3}{2}\right)^2 = \left(\frac{8}{2}\right)^2 - \left(\frac{2}{2}\right)^2 = 4^2 - 1^2$	1 1 1
	SECTION D	
13	(i) Outer angle of a regular pentagon $= \frac{360}{5} = 72^0$ (ii) For drawing a line 3 centimetres long and another line of 4 centimetres at one of its ends , making an angle of 108°. For continuing this and completing the regular pentagon.  	1 1 2

	Another way  	
14	(i) $A = \sqrt{1600} = 40$, $B = \sqrt{36} = 6$ $C = D = 40 \times 6 = 240$ (ii) 46 (iii) $46^2 = 1600 + 240 + 240 + 36 = 2116$  	1 1 1 1
15(A)	(i) $6^2 = 36$, $16^2 = 256$ (ii) Square of any number ending in 6 also end in 6. All numbers ending in 6 can be written in the general form $10n + 6$ $(10n+6)^2 = (10n)^2 + 2 \times 10n \times 6 + 6^2$ $= 100n^2 + 120n + 36$ $= 100n^2 + 120n + 30 + 6$ $100n^2 + 120n + 30$ is a multiple of 10 . Ones place digit of the number got by adding 6 to the multiples of 10 is 6 . Another way (ii) Square of any number ending in 6 also end in 6. All numbers ending in 6 can be written in the general form $10n + 6$ $(10n+6)^2 = (10n)^2 + 2 \times 10n \times 6 + 6^2$ $= 100n^2 + 120n + 36$ $= 100n^2 + 120n + 30 + 6$ $= 10(10n^2 + 12n + 3) + 6$ Ones place digit of the number got by adding 6 to the multiples of 10 is 6 .	1 1 1 1
15(B)	(i) 1 , 0 (ii) Non-multiples of 3 leave remainder 1 or 2 on division by 3. All numbers which leave a remainder 1 on division by 3 can be written in the general form $3n + 1$ $(3n+1)^2 = (3n)^2 + 2 \times 3n \times 1 + 1^2 = 9n^2 + 6n + 1$ $9n^2 + 6n$ is a multiple of 3 . Number got by adding 1 to a multiple of 3 leaves remainder 1 on division by 3.	1 1 1

	[OR $(3n+1)^2 = 9n^2 + 6n + 1 = 3(3n^2 + 2n) + 1$] $(3n+2)^2 = (3n)^2 + 2 \times 3n \times 2 + 2^2 = 9n^2 + 12n + 4 = 9n^2 + 12n + 3 + 1$ $9n^2 + 12n + 3$ is a multiple of 3 . Number got by adding 1 to a multiple of 3 leaves remainder 1 on division by 3. [OR $(3n+2)^2 = 9n^2 + 12n + 4 = 9n^2 + 12n + 3 + 1 = 3(3n^2 + 4n + 1) + 1$]	1
16(A)	OA = OB = OC [Radii of a circle are equal]  (i) $\angle AOC = 180 - 70 = 110^0$ [If a line meet another line , then the sum of the angles formed on either side of that line is 180^0] (ii) $\angle OBC = \angle OCB = \frac{180-70}{2} = \frac{110}{2} = 55^0$ [BOC is an isosceles triangle] $\angle OAC = \angle OCA = \frac{180-110}{2} = \frac{70}{2} = 35^0$ [AOC is an isosceles triangle] $\angle A = 35^0$, $\angle B = 55^0$, $\angle ACB = 35 + 55 = 90^0$	1 1 1 1
16(B)	(i) $\angle AMC = \angle BMD$ [When a line crosses another line , the two small angles are of the same measure and the two large angles are of the same measure.]  (ii) Triangles AMC and BMD are equal . [AM = BM , CM = DM , $\angle AMC = \angle BMD$] $\therefore$ AC = BD . The sides opposite to equal angles of equal triangles are equal .	1 1 1 1