SSLC MODEL EXAMINATION 2026
MATHEMATICS – ANSWER KEY
ME 531

Qn no	Key	Score
	SECTION A	
1	(c) 35	1
2	(b) (0,3)	1
3	(d) $4n+3$	1
4	(a) (2,7)	1
5	(d) 60	1
6	(b) 90	1
7	(c) (ii) and (iii) are true.	1
8	(d) Both statements are true and statement 2 is the reason of statement 1.	1
	SECTION B	
9	Probability $= \dfrac{30}{360} + \dfrac{40}{360} + \dfrac{50}{360}$ $= \dfrac{120}{360} = \dfrac{1}{3}$	1 1
10A	(i) Probability of getting an apple $= \dfrac{20}{50} = \dfrac{2}{5}$ (ii) Probability of getting an orange $= \dfrac{30}{50} = \dfrac{3}{5}$ (iii) Probability of getting an orange after putting 10 apples $= \dfrac{30}{60} = \dfrac{1}{2}$	1 1 1
10B	(i) $15 \times 16 = 240$ (ii) Probability of both being white $= \dfrac{7 \times 6}{240} = \dfrac{42}{240} = \dfrac{7}{40}$ (iii) Probability that at least one is white $= 1 - $ Probability of both being blue $\qquad = 1 - \dfrac{8 \times 10}{240} = \dfrac{160}{240} = \dfrac{2}{3}$ OR Probability that at least one is white $= \dfrac{(7 \times 6) + (7 \times 10) + (8 \times 6)}{240} = \dfrac{160}{240} = \dfrac{2}{3}$	1 1 1
11A	(i) $x_4 = \dfrac{140}{7} = 20$ (ii) $x_5 = 25$ $\qquad\left[x_4 + x_5 = \dfrac{180}{4} = 45 \right]$ OR $\quad x_5 = 20 + 5 = 25$ $\qquad \left[x_8 = 180 - 140 = 40 \ , \ 4d = 20 \ , \ d = 5 \right]$ (iii) Sum $= 5\,(25 + 30) = 275$ $\qquad [\ \text{Sum} = 5(x_5 + x_6)\ ]$	1 1 1
11B	(i) $\dfrac{15 \times 16}{2} = 120$ (ii) $x_n = 6n + 1$	1 1

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$$\text{Sum} = 6 \times \frac{15 \times 16}{2} + (1 \times 15) \qquad\qquad [\text{ Sum} = 6 \times \frac{n(n+1)}{2} + (1 \times n)]$$

$$= (6 \times 120) + 15 = 735$$

12

Daily wages	Number of workers
Below 500	7
Below 600	15
Below 700	25
Below 800	34
Below 900	39
Below 1000	43

N = 43

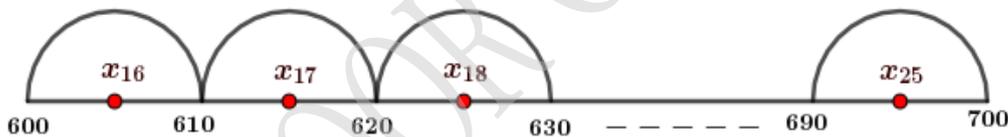(i) Median daily wage = Daily wage of the 22nd worker = x_{22}

Median class = 600 − 700

There are 10 workers in the median class

Divide the 100 rupees between 600 and 700 into 10 equal parts .

Length of one sub division $= \dfrac{100}{10} = 10 = d$

Assume that each such subdivision contains one worker whose daily wage is the mid value of that subdivision . .

(ii) Daily wage of the 16th worker $= x_{16} = \dfrac{600 + 610}{2} = 605$ *Rs*

The daily wages in the median class are in arithmetic sequence

(iii) Median daily wage $= x_{22} = 605 + (6 \times 10) = 665$ *Rs*

SECTION C

13
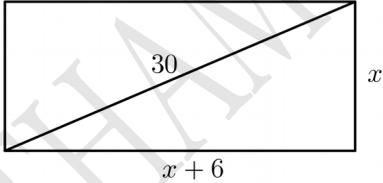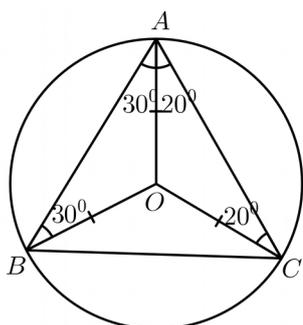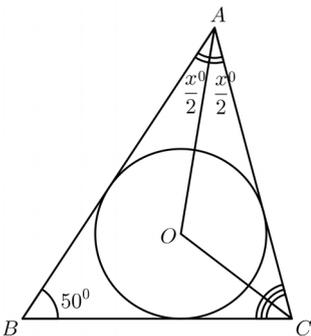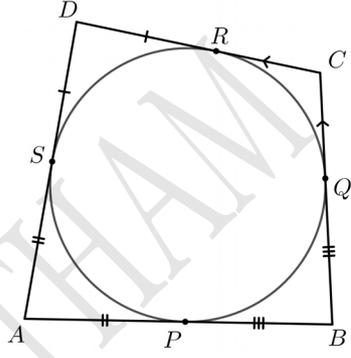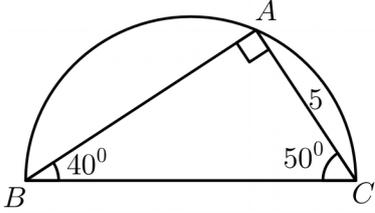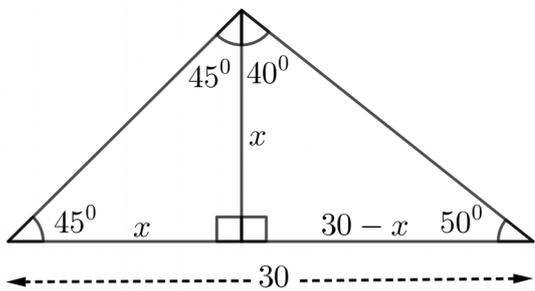
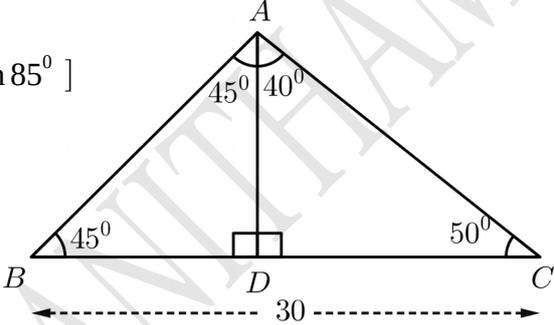(i) Coordinates of the midpoint $= \left(\dfrac{1 + 9}{2} , \dfrac{2 + 10}{2} \right) = (5 , 6)$

(ii)

A
P
B
(1,2)
(3,4)
(5,6)
(7,8)
(9,10)

Coordinates of P = (3,4)

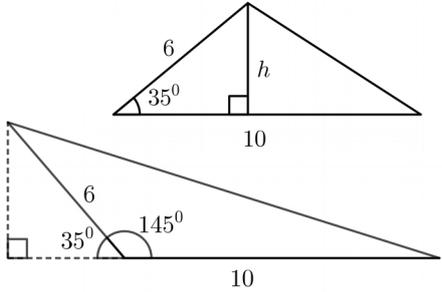|		
14	(i)	3
	(ii) Area of the parallelogram ABCD $= 6 \times 4 = 24$ $sq.\,units$	1
15A	(i) Slope $= \dfrac{7 - 1}{2 - (-1)} = \dfrac{6}{3} = 2$	1
	(ii) $(3,9)$	1
	OR	
	$(5,13)$ [Any point got from the given points such that as the change in x coordinates , then the change in y is 2]	
	(iii) $\dfrac{2x + 3 - 1}{x - (-1)} = \dfrac{2x + 2}{x + 1} = \dfrac{2(x + 1)}{x + 1} = 2$	2
	Since the slope is the same , $(x\,,2x + 3)$ is a point on this line.	
	OR	
	If (x,y) is a point on this line ,	
	$\dfrac{y - 1}{x - (-1)} = 2$ $==>$ $\dfrac{y - 1}{x + 1} = 2$ $==>$ $y - 1 = 2(x + 1)$	
	$y - 1 = 2x + 2$ $==>$ $y = 2x + 3$	
15B	(i) $(10,0)$ OR $(-10,0)$	1
	(ii) $\sqrt{(5 - 0)^2 + (9 - 0)^2} = \sqrt{25 + 81} = \sqrt{106}$	1
	$(5,9)$ is outside the circle. [$\sqrt{106}$ is greater than 10]	1
	(iii) $(x - 0)^2 + (y - 0)^2 = 10^2$ $==>$ $x^2 + y^2 = 100$	1
	SECTION D	
16	(i) 1	1
	(ii) The squares of the numbers leave remainder 1 on division by 3 are again leave remainder 1 on division by 3 . So the squares of each term is also a term of this sequence.	2
	OR	
	$x_n = 3n + 1$ [$x_n = dn + f - d$]	
	$x_n^2 = (3n + 1)^2 = 9n^2 + 6n + 1 = 3(3n^2 + 2n) + 1$	

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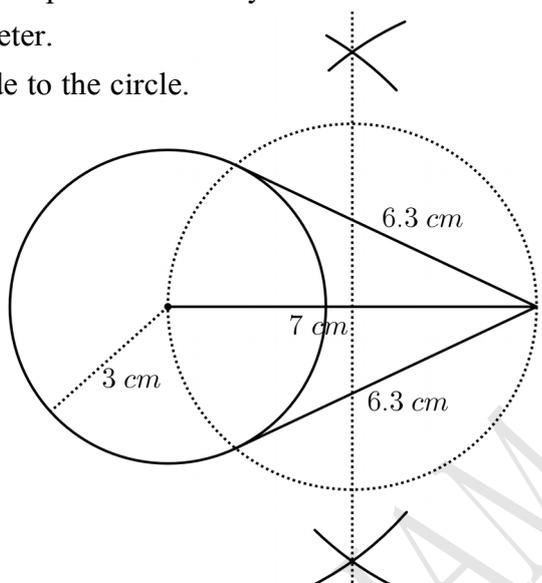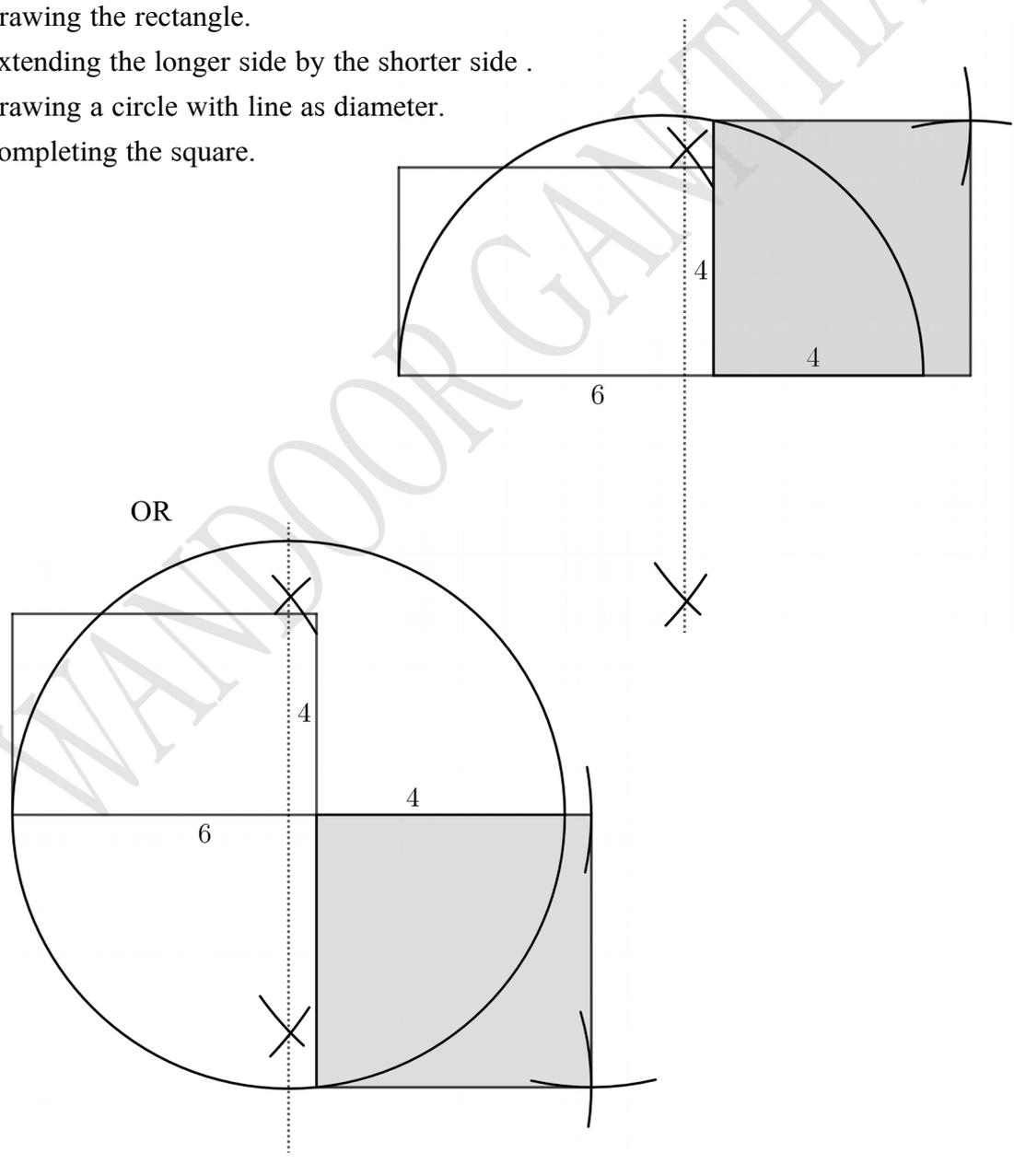|		
	The squares of each term of this sequence leaves remainder 1 on division by 3 . So the squares of each term is also a term of this sequence.	
17A	(i) $3 + 6 + 9 + \ldots + 60 = 3(1 + 2 + 3 + \ldots + 20)$ $\qquad\qquad\qquad\qquad = 3 \times \dfrac{20 \times 21}{2} = 630$ (ii) $6 + 12 + 18 + \ldots + 120 = 2(3 + 6 + 9 + \ldots + 60) = 2 \times 630 = 1260$ (iii) $1260 + (20 \times 2) = 1300$	1 1 1 1
17B	(i) $x_2 + x_{29} = 60$ $\qquad\qquad\qquad\qquad\qquad\qquad [\, x_1 + x_{30} = x_2 + x_{29}\,]$ (ii) $x_{15} + x_{16} = 60$ $\qquad\qquad\qquad\qquad [\, x_1 + x_{30} = x_2 + x_{29} = x_{15} + x_{16}\,]$ (iii) Sum $= 15 \times 60 = 900$	1 1 1
18	(i) Length of the shorter side $= x$ $= = >$ Length of the larger side $= x + 6$ $\qquad (x + 6)^2 + x^2 = 30^2$ $= = >$ $2x^2 + 12x + 36 = 900$ (ii) $2x^2 + 12x = 900 - 36 = 864$ $\qquad x^2 + 6x = 432$ $\qquad x^2 + 6x + 3^2 = 432 + 3^2$ $\qquad (x + 3)^2 = 441$ $\qquad x + 3 = \sqrt{441} = 21$ $= = >$ $x = 18$ Lengths of the sides $= 18$ cm. , 24 cm.	1 1 1 1
19	(i) $3 \times 5^2 + (6 \times 5) = 75 + 30 = 105$ (ii) $3n^2 + 6n = 360$ $= = >$ $3(n^2 + 2n) = 3 \times 120$ $= = >$ $n^2 + 2n = 120$ $\qquad n^2 + 2n + 1^2 = 120 + 1^2$ $= = >$ $(n + 1)^2 = 121$ $\qquad n + 1 = \sqrt{121} = 11$ $= = >$ $n = 10$ $\qquad\qquad\qquad\qquad\qquad\qquad$ OR $\qquad 3 \times 10^2 + (6 \times 10) = 360$ $\qquad \therefore$ Number of terms $= 10$	1 1 1 1
	SECTION E	
20A	Join OA , (i) $\angle OAB = \angle OBA = 30^0$ $\qquad\qquad\qquad [OA = OB\,]$ $\quad \angle OAC = \angle OCA = 20^0$ $\qquad\qquad\qquad [OA = OC\,]$ $\quad \angle BAC = \angle OAB + \angle OAC = 30 + 20 = 50^0$ (ii) $\angle BOC = 2 \times 50 = 100^0$ $\qquad [\angle BOC = 2 \times \angle BAC]$	1 1 1
20B	(i) $\angle OAC = \dfrac{x^0}{2}$ $\qquad\qquad\qquad\qquad [\angle BAC = x^0]$ (ii) $\angle OAC + \angle OCA = \dfrac{180 - 50}{2} = 65^0$ $\quad \angle AOC = 180 - \dfrac{130}{2} = 180 - 65 = 115^0$	1 1 1

21	(i) $\angle BCD = 180 - 80 = 100^0$ [Sum of the angles of a cyclic quadrilateral is 180^0]
	
	    $\angle CBE = 180 - 70 = 110^0$
	
	        $[\angle ABC = 180 - 110 = 70^0]$
	
	(ii) Take $\angle CBE = x^0$
	
	   Then $\angle ABC = 180 - x^0$
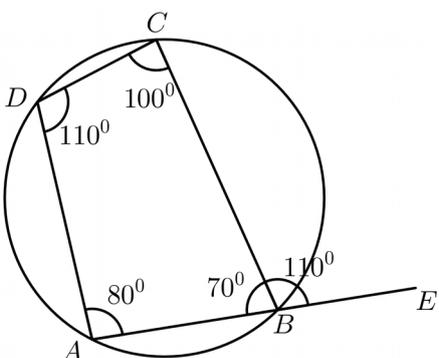	
	     $==>$ $\angle ADC = x^0$
			1
			
			1
			
			1
			1

22A	(i) AS = AP = 3 cm
	(ii) BP = BQ
	   CQ = CR
	   DR = DS
	   AB + CD = AP + BP + CR + DR
	            $=$ AS + BQ + CQ + DS
	            $=$ (AS + DS) + (BQ + CQ)
	            $=$ AD + BC
			1
			
			1
			
			1
			
			1

22B	It is aright triangle.
	  $2r = 6 + 8 - 10$ $==>$ $2r = 4$
	  $r = 2\ cm$
	
	                  OR
	
	 It is aright triangle.
	
	 Area of the triangle $= \dfrac{1}{2} \times 6 \times 8 = 24\ sq.cm$
	
	 Perimeter of the triangle $= 6 + 8 + 10 = 24\ cm$
	
	 $r = \dfrac{A}{S} = \dfrac{24}{12} = 2\ cm$
			1
			1
			1

23	(i) $\angle BAC = 90^0$
	
	(ii) $r = \dfrac{5}{2 \times 0.6428}\ cm$
	
	       $[\ \sin 40^0 = \dfrac{5}{2r}$ OR $\cos 50^0 = \dfrac{5}{2r}\ ]$
	
	(iii) $AB = 5 \times 1.1918\ cm$.
	
	             $\left[\ \tan 50^0 = \dfrac{AB}{5}\ \right]$
	
	  Perimeter of the triangle $= 5 + \left(5 \times 1.1918\right) + \dfrac{5}{0.6428}\ cm$
			1
			
			1
			
			1
			
			1

24A	(i)		1

	(ii) In larger right triangle , $\tan 40^0 = \dfrac{30-x}{x}$ $==>$ $0.8391 = \dfrac{30-x}{x}$	1
	$0.8391\,x = 30-x$ $==>$ $1.8391\,x = 30$ $==>$ $x = \dfrac{30}{1.8391}$	
	Height of the post $= \dfrac{30}{1.8391}\ m$	1
	OR	1
	In larger right triangle , $\tan 50^0 = \dfrac{x}{30-x}$ $==>$ $1.1918 = \dfrac{x}{30-x}$	
	$1.1918(30-x) = x$ $==>$ $2.1918\,x = 1.1918 \times 30$ $==>$ $x = \dfrac{1.1918 \times 30}{2.1918}$	
	Height of the post $= \dfrac{1.1918 \times 30}{2.1918}\ m$	
	OR	
	$2r = \dfrac{30}{\sin 85^0} = \dfrac{30}{0.9962}$ $\qquad [\ BC = 2r\,\sin 85^0\ ]$	
	$AB = 2r\,\sin 50^0 = \dfrac{30}{0.9962} \times 0.7660\ m$	
	$AD = \dfrac{1}{\sqrt{2}} \times AB$	
	$= \dfrac{1}{\sqrt{2}} \times \dfrac{30}{0.9962} \times 0.7660\ m$	
24B	(i) $h = 6 \times \sin 35^0 = 6 \times 0.5736\ cm$	
	Area of the triangle $= \dfrac{1}{2} \times 10 \times 6 \times 0.5736$	
	$= 30 \times 0.5736\ sq.cm$	
	(ii) Area of the triangle $= 30 \times 0.5736\ sq.cm$	
25A	(i) Slant height $= \sqrt{25^2 - 15^2} = 20\ cm$ $\qquad \left[\ \left(\dfrac{a}{2}\right)^2 + l^2 = e^2\ \right]$	1
	(ii) Height $= \sqrt{20^2 - 15^2} = \sqrt{175} = 5\sqrt{7}\ cm$ $\qquad \left[\ \left(\dfrac{a}{2}\right)^2 + h^2 = l^2\ \right]$	2
	(iii) Volume $= \dfrac{1}{3} \times 30^2 \times 5\sqrt{7} = 1500\sqrt{7}\ cubic.cm$ $\qquad \left[\ V = \dfrac{1}{3}a^2 h\ \right]$	2
25B	(i) Slant height $= 25\ cm$	1
	(ii) $r = \dfrac{216}{360} \times 25 = 15\ cm$ $\qquad \left[\ \dfrac{x}{360} = \dfrac{r}{R}\ \right]$	2
	(iii) Height $= \sqrt{25^2 - 15^2} = 20\ cm$ $\qquad \left[\ r^2 + h^2 = l^2\ \right]$	1
	Volume $= \dfrac{1}{3} \times \pi \times 15^2 \times 20 = 1500\,\pi\ cubic.cm$ $\qquad \left[\ V = \dfrac{1}{3}a^2 h\ \right]$	1

26	For drawing a circle of radius 3 cm and mark point 7 cm away from the centre.	1
	For drawing a circle with this line as diameter.	
	For drawing tangents from the point outside to the circle.	
	For measuring the tangents.	1
		1
		1
27	For drawing the rectangle.	1
	For extending the longer side by the shorter side .	1
	For drawing a circle with line as diameter.	1
	For completing the square.	1
		1
	OR	