SECOND TERM EVALUATION 2022 - 2023

A	MATHEMATICS – ANSWER KEY – EM		E 803

Qn no.	Key	Score	
	Each questions from 1 to 5 carries 2 scores.		
1	**a) 51** **b) $x + 1$**	1 1	2
2	**a) $\angle B = 80^0$** b) **$\angle C = 180^0 - 80^0 = 100^0$**	1 1	2
3	**$1000 \times 1 \times \dfrac{r}{100} = 100$** **$r = \dfrac{100}{10} = 10$**	1 1	2
4	**a) $x - y$** **b) $52^2 - 48^2 = (52 + 48)(52 - 48) = 100 \times 4 = 400$**	1 1	2
5	**Diagonals bisect each other .**	2	2
	Each questions from 6 to 11 carries 3 scores.		
6	**a) $5 \times 11 - 4 \times 12 = 7$** **b) Yes .** **$(x + 1)(x + 7) - x(x + 8) = x^2 + 8x + 7 - (x^2 + 8x)$** $= 7$	1 1 1	3
7	**For drawing a line of length 7 cm .** **For drawing o 45^0 angles on its ends . .** **For drawing square . .**	1 1 1	3

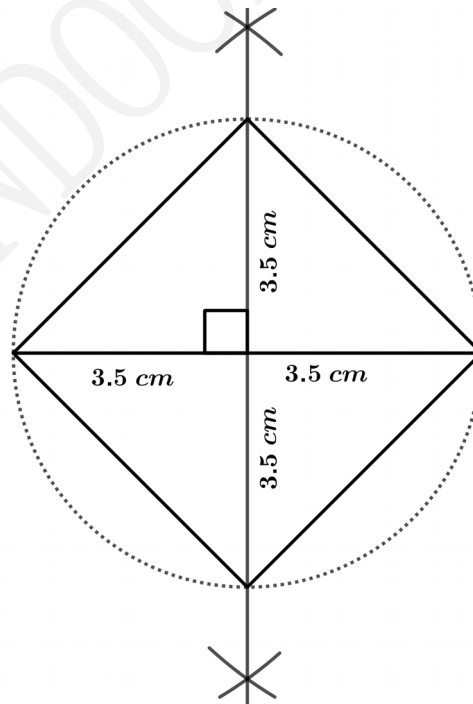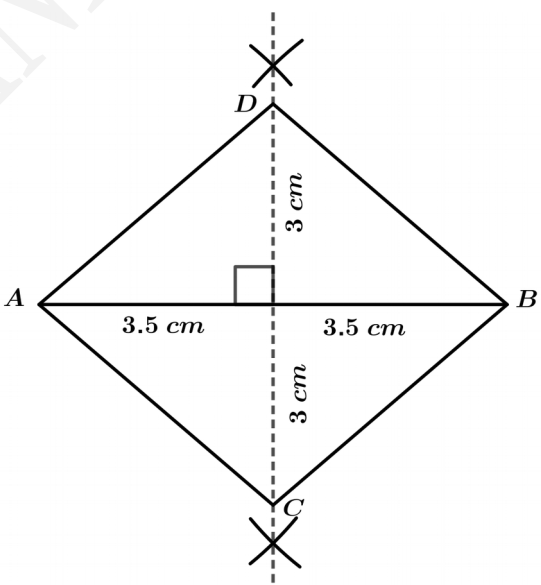**SARATH A S , VMC GHS WANDOOR , MALAPPURAM**
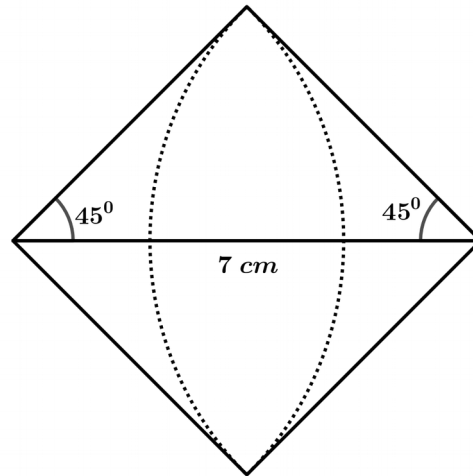
OR

For drawing a line of length 7 cm .

For drawing the perpendicular bisector of the line .

For the marking two points 3.5 cm above and below on the

perpendicular bisector from the midpoint of the line and
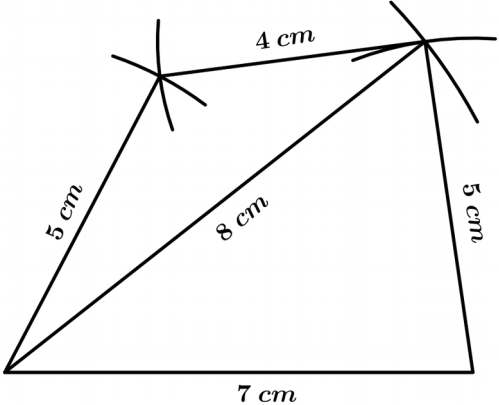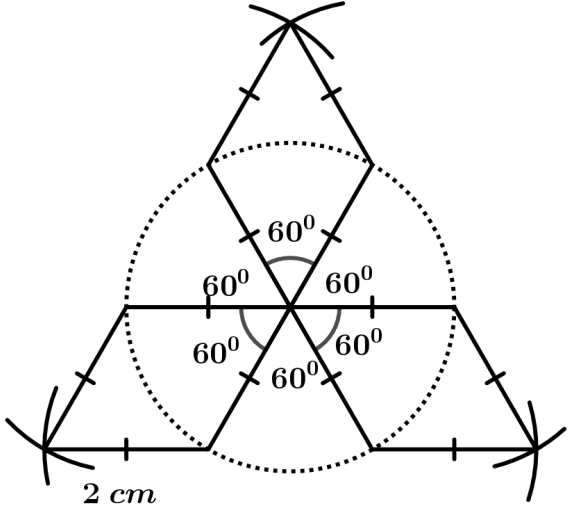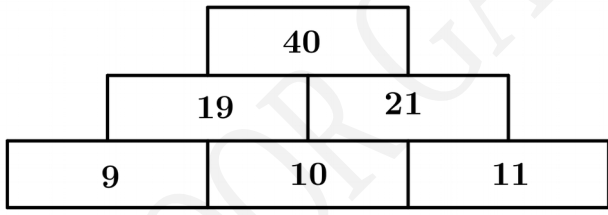
completing the square .

SARATH A S , VMC GHS WANDOOR , MALAPPURAM

8	Interest for the first year $= 10000 \times \dfrac{5}{100} = 500 \ Rs$	1	
	Amount gets after one year $= 10000 + 500 = 10500 \ Rs$	1	3
	Interest for the second year $= 10500 \times \dfrac{5}{100} = 525 \ Rs$	1	
	Amount gets after two years $= 10500 + 525 = 11025 \ Rs$		
	OR		
	$A = 10000 \times \left(1 + \dfrac{5}{100}\right)^2 = 10000 \times \dfrac{105}{100} \times \dfrac{105}{100} = 11025 \ Rs$		
9	a) 1	1	
	b) $51 \times 21 = (50 + 1)(20 + 1) = 50 \times 20 + 50 + 20 + 1$	1	3
	$= 1071$	1	
10	a) $\angle AOB = 90^0$	1	
	b) For drawing a line of length 7cm and drawing its perpendicular bisector .	1	3
	For the marking two points B and D 3 cm above and below on the perpendicular bisector from the midpoint of the line and completing the rhombus .	1	

SARATH A S , VMC GHS WANDOOR , MALAPPURAM

11	**a) If the amount is taken as x rupees ,**	1	
	$$x \times 2 \times \frac{8}{100} = 200 \implies x = \frac{200 \times 100}{2 \times 8} = 1250 \, Rs$$		
	b) Interest for the first year $= 1250 \times \frac{8}{100} = 100 \, Rs$		
	Amount gets after one year $= 1250 + 100 = 1350 \, Rs$		3
	Interest for the second year $= 1350 \times \frac{8}{100} = 108 \, Rs$	1	
	Compound interest $= 100 + 108 = 208 \, Rs$	1	
	OR		
	$$A = 1250 \times \left(1 + \frac{8}{100}\right)^2 = 1250 \times \frac{108}{100} \times \frac{108}{100} = 1458 \, Rs$$		
	Compound interest $= 1458 - 1250 = 208 \, Rs$		
	Another method		
	Simple interest for two years = 200 Rs		
	Simple interest for one years = 100 Rs		
	Compound interest for the first year = 100 Rs		
	Compound interest for the first years $= 100 + 100 \times \frac{8}{100} = 108 \, Rs$		
	Total compound interest $= 100 + 108 = 208 \, Rs$		

<p style="text-align:center; color:red">**Each questions from 12 to 18 carries 4 scores.**</p>

12	**a)** $4 \times 7 = (5 \times 6) - 2$	1	
	$5 \times 8 = (6 \times 7) - 2$	1	
	b) $a \times d = (b \times c) - 2$	1	4
	c) $98 \times 101 = (99 \times 100) - 2 = 9898$	1	

13	a) $40000 \times \left(1 - \dfrac{10}{100}\right)^2 = 40000 \times \dfrac{90}{100} \times \dfrac{90}{100}$ $= 32400 \ Rs$	3 1	4
14		4	4
15	a) $20 = 4 \times 5 \times 1 = 6^2 - 4^2$ b) $4 \times x \times 1 = (x+1)^2 - (x-1)^2$ $(x+1)^2 - (x-1)^2 = (x+1+x-1)(x+1-[x-1])$ $= 2x \times 2 = 4 \times x \times 1$	2 1 1	4
16	a) Interest for the first year $= 20000 \times \dfrac{8}{100} = 1600 \ Rs$ Amount gets after one year $= 20000 + 1600 = 21600 \ Rs$ Interest for the second year $= 21600 \times \dfrac{8}{100} = 1728 \ Rs$ Amount gets after second year $= 21600 + 1728 = 21600 \ Rs$ **OR** $A = 20000 \times \left(1 + \dfrac{8}{100}\right)^2 = 20000 \times \dfrac{108}{100} \times \dfrac{108}{100} = 23328 \ Rs$ b) $A = 20000 \times \left(1 + \dfrac{8}{2 \times 100}\right)^{2 \times 2} = 20000 \times \left(\dfrac{104}{100}\right)^4$ $= 20000 \times \dfrac{104}{100} \times \dfrac{104}{100} \times \dfrac{104}{100} \times \dfrac{104}{100} = 23397.17 \ Rs$ c) Vijayan got 69.7 Rs more .	1 1 1 1	4

<div align="center">**SARATH A S , VMC GHS WANDOOR , MALAPPURAM**</div>

17		4	
18	**a)** 20	1	
	b) 4 × 5	1	4
	c)		
		2	