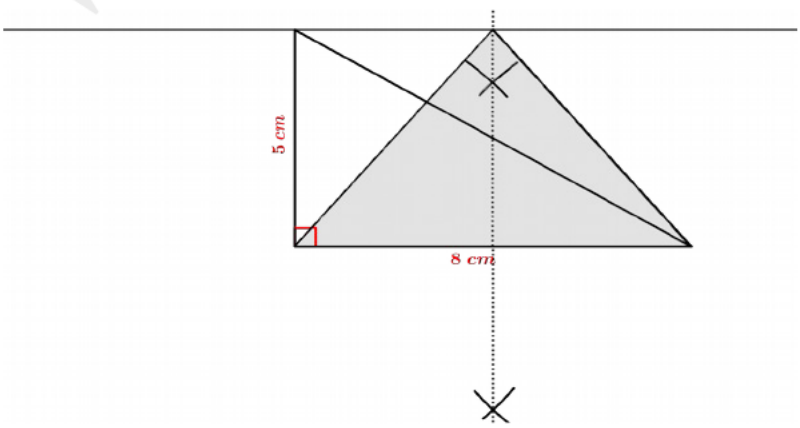
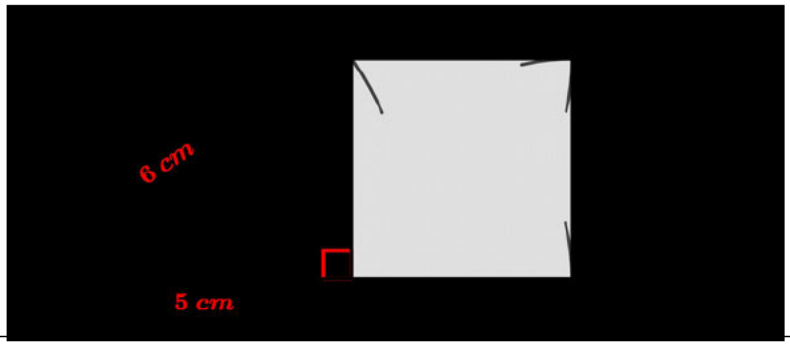
FIRST TERM EVALUATION 2023 - 2024

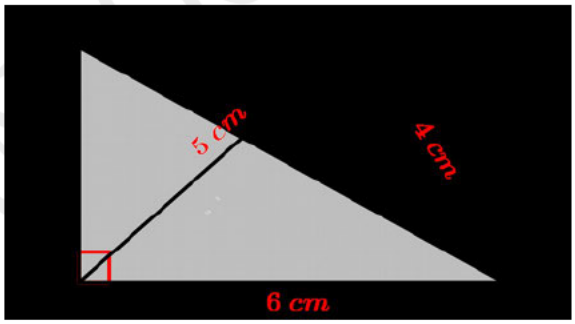
A | **MATHEMATICS EM – ANSWER KEY** | **E-903**

Qn no.	Key	Score	
	Each questions from 1 to 5 carries 2 scores. (Answer any 4)		
1	a) $18\ sq.cm$ b) $2\ cm$	1 1	2
2	a) $\frac{4}{10}$ b) 0.4	1 1	2
3	a) $2x + 5 = 25$ b) $x = 10$	1 1	2
4	a) $2\sqrt{2}\ cm$ b) $2\sqrt{2} \times 2\sqrt{2} = 8\ sq.cm$	1 1	2
	Each questions from 5 to 10 carries 3 scores. (Answer any 4)		
5	a) $10 \times \frac{2}{5} = 4\ cm$ b) $\frac{1}{2} \times 6 \times 4 = 12\ sq.cm$	1 2	3
6	a) 0.1 b) $0.1 + 0.01 = 0.11$	1 2	3
7	a) $\frac{40}{2} = 20$ b) Length $= 12\ cm$, breadth $= 8\ cm$	1 2	3
8		1 1 1	3

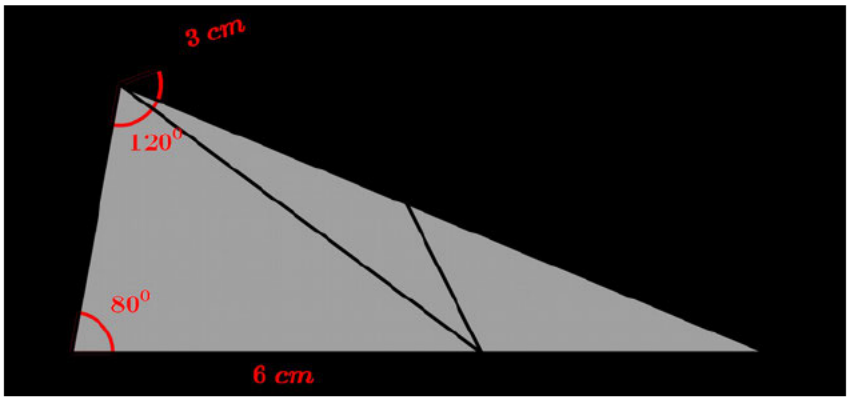
VANDOOR CANTHAM

9	a) $\frac{4}{2} = 2\ cm$ b) $2\sqrt{3}\ cm$ c) $2\sqrt{3} \times 2\sqrt{3} = 12\ sq.cm$	1 1 1	3
10	a) $\frac{6}{2} = 3\ cm$ b) $AP = 5 - 3 = 2\ cm$ $QB = 5 - 3 = 2\ cm$	1 1 1	3
	Each questions from 11 to 21 carries 4 scores. (Answer any 8)		
11	a) $10\ sq.cm$ b) $20 : 10 = 2 : 1$ c) Area of $\Delta DOC = 10 \times \frac{1}{2} = 5\ sq.cm$ Area of the trapezium ABCD $= 20 + 10 + 5 + 10 = 45\ sq.cm$	1 1 1 1	4
12	a) $\frac{2}{9} = 0.222\ldots$, $\frac{4}{9} = 0.444\ldots$ b) $\frac{6}{9} = 0.666\ldots$ c) $\frac{2}{9} = 0.222\ldots$	2 1 1	4
13	a) $52 = 5 \times 10 + 2$ b) If the digits are taken as x and y , $x + y = 13$ $10y + x = 10x + y + 27 \Rightarrow y - x = 3$ Number $= 58$	1 1 1 1	4
14	a) $\sqrt{6^2 - 5^2} = \sqrt{11}$ b) 	1 3	4

WANDOOR GANITHAM

15	a) $\frac{1}{10}$, $\frac{16}{100}$, $\frac{166}{1000}$	3	4
	b) 0.1666 . . .	1	
16	a) $(\sqrt{5})^2 - 2^2 = 5 - 4 = 1$	1	4
	b) $\frac{1}{\sqrt{5} - 2} \times \frac{\sqrt{5} + 2}{\sqrt{5} + 2}$	1	
	$= \frac{\sqrt{5} + 2}{(\sqrt{5})^2 - 2^2}$	1	
	$= \sqrt{5} + 2 = 4.236$	1	
17	a) $3x + 4y = 68$	1	4
	$4x - 2y = 10$		
	b) $2(4x - 2y) = 2 \times 10 \Rightarrow 8x - 4y = 20$ +	1	
	$3x + 4y = 68$		
	$11x + 0 = 88 \Rightarrow x = \frac{88}{11} = 8$	1	
	$3 \times 8 + 4y = 68 \Rightarrow y = \frac{44}{4} = 11$	1	
18	a)	1	4
	b) 	1 1 1	
19	a) $\sqrt{36} = 6$	1	4
	b) $\sqrt{12} = \sqrt{4 \times 3} = 2\sqrt{3} \Rightarrow x = 2$	1	
	c) $2\sqrt{3} + \sqrt{3} = 3\sqrt{3}$	1	
	d) $\sqrt{\frac{12}{3}} = \sqrt{4} = 2$	1	

WAYANADOR GANITHAM

20	a) $\frac{4125}{1000}$ b) $\frac{33 \times 125}{8 \times 125} = \frac{33}{8} = \frac{66}{16}$	1 3	4
21	a) $5x + 3y = 108$ $3x + 5y = 84$ b) $5(3x + 5y) = 5 \times 84 \implies 15x + 25y = 420$ − $3(5x + 3y) = 3 \times 108 \implies 15x + 9y = 324$ $0 + 16y = 96 \implies y = \frac{96}{16} = 6$ $5x + 3 \times 6 = 108 \implies x = \frac{90}{5} = 18$	1 1 1 1	4
	Each questions from 22 to 29 carries 5 scores. (Answer any 6)		
22	a) $AD = \frac{10}{2} = 5\ cm$ b) $\frac{1}{2} \times 5 \times 4 = 10\ sq.cm$ c) $\frac{1}{2} \times 10 = 5\ sq.cm$	1 2 2	5
23	a) b) c) $x - 5 = 4(y - 5) \implies x - 4y = -15$ $x + 5 = 2(y + 5) \implies x - 2y = 5$ $x = 25$, $y = 10$	2 2 1	
24	 	1 1 1 1 1	5

	Before 5 years	After 5 years
Age of Babu	$x - 5$	$x + 5$
Age of Rasheed	$y - 5$	$y + 5$

WANDOOR GANITHAM

25	a) $2\ cm$ b) $2 + 1 + \sqrt{3} = 3 + \sqrt{3} = 4.732\ cm$ c) $\sqrt{3} + 1 + \sqrt{3} + 1 = 2 + 2\sqrt{3} = 5.464\ cm$ d) $\sqrt{3} - 1 = 0.732\ cm$	1 1 1 2	5
26	<table><tr><th>Sum</th><th>Denominator powers of 10</th><th>Decimal form</th></tr><tr><td>$\frac{1}{2}$</td><td>$\frac{5}{10}$</td><td>0.5</td></tr><tr><td>$\frac{1}{2} + \frac{1}{4}$</td><td>$\frac{5}{10} + \frac{25}{100}$</td><td>0.75</td></tr><tr><td>$\frac{1}{2} + \frac{1}{4} + \frac{1}{8}$</td><td>$\frac{5}{10} + \frac{25}{100} + \frac{125}{1000}$</td><td>0.875</td></tr></table>	1 1 1 2	5
27	a) $x + y = \frac{60}{2} = 30$ b) $x \times y = 216$ c) $x - y = \sqrt{30^2 - 4 \times 216} = 6$ d) $x = 18$, $y = 12$	1 1 1 2	5
28	a) $30\ sq.cm$ b) Area of ΔADC = Area of ΔBDC $= 60\ sq.cm$ c) Area of ΔBRC $= 60 \times \frac{2}{3} = 40\ sq.cm$ Area of ΔABC $= 60 + 60 = 120\ sq.cm$	1 1 2 1	5
29	a) 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 b) 1 , 4 , 9 , 16 , 25 , 36 c) $10^2 = 100$ d) n^2	1 1 1 1 1	5

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