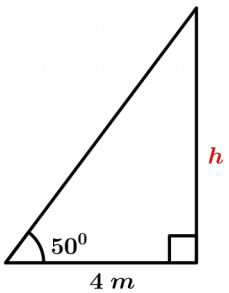
SECOND TERM EVALUATION 2022 - 2023

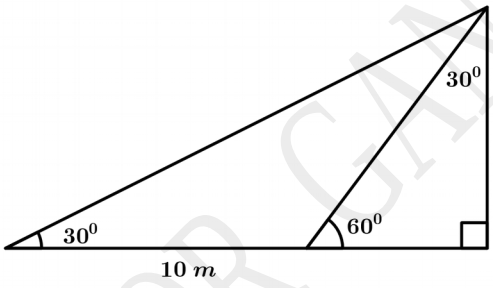
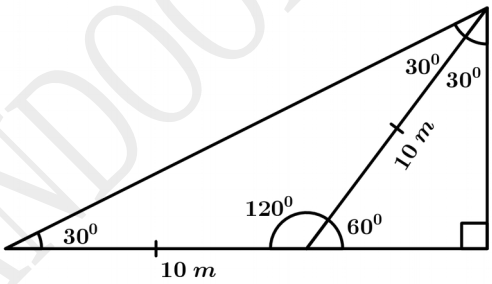
A | **MATHEMATICS – ANSWER KEY** | **E 1003**

Qn no.	Key	Score	
	Each questions from 1 to 4 carries 2 scores.		
1	a) 60^0 b) $3\sqrt{3}\ cm$	1 1	2
2	$(x + 1)^2 = 49$ $x = 7 - 1 = 6\ m$	1 1	2
3	a) $(7, 0)$ b) $(0, 5)$	1 1	2
4	a) 120^0 b) 60^0	1 1	2
	Each questions from 5 to 10 carries 3 scores.		
5	a) $\sqrt{4^2 + 3^2} = 5$ b) $\sin A = \frac{4}{5}$ $\cos A = \frac{3}{5}$	1 1 1	3
6	a) $\angle PAB = 55^0$ b) $\angle PBA = 55^0$ $\angle P = 70^0$	1 1 1	3
7	a) 10 b) $\left(\frac{10}{2}\right)^2 + l^2 = 13^2$ $l = \sqrt{144} = 12$	1 1 1	3

8	a) $OA \times 8 = 4^2$ $OA = \frac{16}{8} = 2$ b) $(-2, 0)$	1 1 1	3
9	a) $\left(\frac{8}{2}\right)^2 = 16$ b) $(x + 4)^2 = 20 + 16$ $x = 6 - 4 = 2$	1 1 1	3
10	a) 90^0 b) For drawing a circle of radius 3.5 cm and marking a point A on it . Drawing tangents to the circle through A .	1 1 1	3
	Each questions from 11 to 21 carries 4 scores.		
11	a) $\sqrt{144} = 12\ cm$ b) $\left(\frac{12}{2}\right)^2 + 8^2 = l^2$ $l = \sqrt{100} = 10\ cm$ c) $2 \times 12 \times 10 = 240\ sq.cm$	1 1 1 1	4
12	a) Coordinates of B $= (5, 3)$ Coordinates of D $= (2, 7)$ b) $\sqrt{(5-2)^2 + (7-3)^2} = \sqrt{25} = 5$	1 1 2	4
13	a)  b) $\tan 50^0 = \frac{h}{4}$ $h = 4 \times 1.19 = 4.76\ m$	1 1 2	4

14	**For drawing a circle of radius 3 cm .** **For marking a point P which is at a distance 7 cm away from the centre .** **For drawing tangents to the circle from P .**	**1** **1** **2**	**4**
15	**a)** $\frac{26}{2} = 13\ cm$ **b) length** $= 13 - x$ **c)** $x(13 - x) = 40 \Rightarrow x^2 - 13x + 40 = 0$ **length = 8 cm , breadth = 5 cm**	**1** **1** **1** **1**	**4**
16	**a)** $12 \times PB = 6^2$ $PB = \frac{36}{12} = 3\ cm$ **b)** $AB = 12 - 3 = 9\ cm$	**1** **2** **1**	**4**
17	**a)** $\sqrt{(6-3)^2 + (4-0)^2} = \sqrt{25} = 5$ **b)** $(3 + 5, 0) = (8, 0)$ $(3 - 5, 0) = (-2, 0)$	**2** **1** **1**	**4**
18	**a)** 40^0 **b)** 90^0 **c) In triangle ABD ,** $\sin 40^0 = \frac{AB}{6}$ $AB = 0.64 \times 6 = 3.84\ cm$	**1** **1** **1** **1**	**4**
19	**a)** 50^0 **b) For drawing a circle of radius 2.5 cm .** **For marking angles** 130^0 **,** 120^0 **and** 110^0 **at the centre of the circle** **For drawing the sides of the triangle touching the circle**	**1** **1** **1** **1**	**4**

20	a) $(6\ ,\ 0)$ b) $3\sqrt{3}$ c) $(3\ ,\ 3\sqrt{3})$	1 1 2	4
21	a) 50^0 b) $8\ cm$ c) $h = 8 \times \sin 80^0 = 7.84\ cm$ Area $= \frac{1}{2} \times 8 \times 7.84 = 31.36\ sq.cm$	1 1 1 1	4
Each questions from 22 to 29 carries 5 scores.			
22	a) $4\ cm$ b) $10\ cm$ c) $10 + 10 + 8 = 28\ cm$ d) $\frac{28}{2} \times 2 = 28\ sq.cm$	1 1 2 1	5
23	a) 15^0 b) $8\ cm$ c) 30^0 d) $QS = 4\sqrt{3}\ cm$ $QR = 4\ cm$	1 1 1 1 1	5
24	a) 50^0 b) 80^0 c) $\angle CQR = 60^0$ $\angle C = 60^0$ $\angle A = 40^0$	1 1 1 1 1	5

25	**a)** $8 \times 10 = 80\ cm$	**1**	
	b) $5\sqrt{3}\ cm$	**1**	
	c) $\left(\frac{10}{2}\right)^2 + h^2 = \left(5\sqrt{3}\right)^2$	**1**	**5**
	$h = \sqrt{50} = 5\sqrt{2}\ cm$	**1**	
	d) $\frac{1}{3} \times 10^2 \times 5\sqrt{2} = \frac{500\sqrt{2}}{3}\ cubic.cm$	**1**	
26	**a) For marking the points .**	**3**	
	b) For drawing the triangle .	**1**	**5**
	c) $(2, 5)$ **(OR any point with y coordinate 5)**	**1**	
27	**a)** 	**1**	
	b) 	**2**	**5**
	Width of the river = 5 m	**1**	
	c) $5\sqrt{3}\ m$	**1**	
28	**For drawing triangle .**	**1**	
	For drawing bisectors of the angles .	**2**	**5**
	For drawing the incircle of the triangle .	**2**	

29	**a)** $3\ cm$	**1**	**5**
	b) $2\ cm$	**1**	
	c) $13 + BC$	**1**	
	d) Half the perimeter of the triangle ABC .	**1**	
	e) $\frac{30}{2} = 15\ cm$	**1**	