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Topical Worksheets for Cambridge IGCSE™
Mathematics (0580/0980)

Geometry

Mark Scheme

1st edition, for examination until 2025

Question	Answer	Marks	AO Element	Notes	Guidance
1	Acute	1			
2(a)	Chord	1			
2(b)	16	1			
3	7	3		M2 for $166 + 2x = 180$ or better or M1 for $97 - 3x + 69 + 5x = 180$ oe	
4	109	3		M1 for $(180 - 38) \div 2$ oe M1 for $180 - \text{their } ACB$	
5	Three correct lines on first shape AND One correct line on second shape	3		B2 for three correct lines on first shape or B1 for one or more correct lines and no wrong lines B1 for one correct line on second shape	
6	2	1			

Question	Answer	Marks	AO Element	Notes	Guidance
7	M1 for angle $ACB = 65^\circ$ or angle $RPQ = 37^\circ$ A1 for 2 pairs of equal angles oe	2			
8(a)	$2x - 3$	2		B1 for $kx - 3$ or $2x + k$ $k \neq -3$	
8(b)	Ruled line perpendicular to L	1			
9	140	2		M1 for $360 \div 9$	
10	Correct shape drawn	1			
11	Correct shape drawn	2		M1 for 3 sides correctly reflected or 4 correct vertices	
12	Kite or isosceles trapezium	1			
13	2	1			
14	Circle with 3.8 cm radius drawn	2		M1 for $11.4 \div 1.5$ or $5.7 \div 1.5$	
15(a)	72 Corresponding angles	2		B1 for each	

Question	Answer	Marks	AO Element	Notes	Guidance
15(b)	65 Angles [at a point] sum [to] 360 oe	2		B1 for each	
16	116	2		M1 for angle $ACB = 32$ soi	
17	Complete explanation with geometrical reasons	3		B1 for $RQP = x^\circ$ QR bisects angle PQB B1 for $RPQ = x^\circ$ alternate segment theorem B1 for triangle PQR has two equal angles both less than 60 (so can't be equilateral) so must be isosceles	

Question	Answer	Marks	AO Element	Notes	Guidance
18	16.6 or 16.64...	5		M2 for $21 \times \frac{18}{13.5} = [AC]$ oe or M1 for scale factor $\frac{13.5}{18}$ or $\frac{18}{13.5}$ oe soi Then Pythagoras method: and M2 for $\sqrt{28^2 + 18^2} [\div 2]$ or $\sqrt{(their\ AC)^2 + 18^2} [\div 2]$ or M1 for $AD^2 = 28^2 + 18^2$ or $AD^2 = (their\ AC)^2 + 18^2$ OR alternative trigonometry method e.g. M1 for $\tan E = \frac{21}{13.5}$ and M1 for $AD = \frac{18}{\cos\ their\ 57.3}$	

Question	Answer	Marks	AO Element	Notes	Guidance
19	[x =] 55 [y =] 24	2		B1 for each	
20(a)	49	1			
20(b)	98	1		FT 2 × <i>their</i> (a)	
20(c)	20	1			
20(d)	70	1		FT 90 – <i>their</i> (c)	
21	25	2		B1 for 130 seen or M1 for $50 \div 2$	
22	5	3		M2 for $8 \times \sqrt{\frac{52.5}{134.4}}$ oe or M1 for $\sqrt{\frac{52.5}{134.4}}$ or $\sqrt{\frac{134.4}{52.5}}$ oe	
23(a)	Equilateral	1			
23(b)(i)	4.1 to 4.5	1			
23(b)(ii)	10.25 to 11.25	2		M1 for $0.5 \times 5 \times$ <i>their</i> (b)(i)	

Question	Answer	Marks	AO Element	Notes	Guidance
23(b)(iii)	61.5 to 67.5	2		FT <i>their (b)(ii)</i> B1 for 6 seen	
24(a)	Correct position of town <i>B</i>	2		B1 for correct bearing B1 for correct distance	
24(b)(i)	Correct triangle drawn	3		B2 for correct triangle with no or wrong arcs or correct position of <i>C</i> with arcs (no triangle) or B1 for one line correct length drawn or 7 and 5 seen	
24(b)(ii)	38 to 42	1		FT <i>their</i> measured angle at <i>C</i>	
25(a)	Tangent	1			
25(b)(i)	22π final answer	2		M1 for $2 \times 11 \times \pi$	
25(b)(ii)	40	2		B1 for angle $OBC = 40^\circ$ or angle $BOG = 140^\circ$	
25(b)(iii)	7.68 or 7.679 to 7.680....	2		FT <i>their (b)(ii)</i> and <i>(b)(i)</i> M1 for $\frac{\text{their (b)(ii)}}{360} \times \text{their (b)(i)}$	

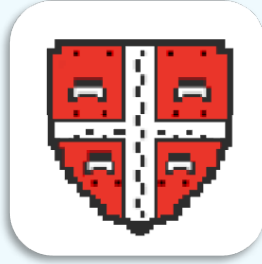
Question	Answer	Marks	AO Element	Notes	Guidance
25(c)(i)	Angle [between] tangent [and] radius	1			
25(c)(ii)	B1 for $180 - 140$ or $90 - \text{their}$ (b)(ii) M1 for $\tan (180 - 140) = \frac{11}{BC}$ oe A1 for $[BC =] 13.109[...]$	3			
25(c)(iii)	6.11 or 6.112 to 6.114	3		M1 for $[OB^2 =] 13.11^2 + 11^2$ A1 for 17.1 or 17.11 or 17.112 to 17.114 OR M1 for $\frac{11}{\sin 40}$ oe A1 for 17.1 or 17.11... or 17.112 to 17.113	
26(a)	Kite	1			
26(b)(i)	Translation $\begin{pmatrix} 4 \\ 9 \end{pmatrix}$	2		B1 for each	

Question	Answer	Marks	AO Element	Notes	Guidance
26(b)(ii)	Reflection $x = 0.5$ oe	2		B1 for each	
26(b)(iii)	Rotation 90° clockwise oe [centre] (0, 0) oe	3		B1 for each	
26(c)(i)	(-5, -6)	1			
26(c)(ii)	Image at (-5, 0), (-2, 3), (7, 0), (-2, -3)	2		B1 for correct size, wrong position or correct shape with incorrect scale factor	
27	55	2		M1 for 180 – 70	
28(a)	Cuboid	1			
28(b)	10	2		M1 for 5×2 [$\times 1$]	
29(a)	(-1, -2)	1			
29(b)	$\begin{pmatrix} 6 \\ 0 \end{pmatrix}$	1			
29(c)	C marked at (3, 3)	1			

Question	Answer	Marks	AO Element	Notes	Guidance
29(d)(i)	$\begin{pmatrix} 4 \\ 5 \end{pmatrix}$	1		FT <i>their</i> (b) + $\begin{pmatrix} -2 \\ 5 \end{pmatrix}$	
29(d)(ii)	$\overrightarrow{AC}$	1			
29(e)(i)	Correct parallelogram drawn	1		FT <i>their</i> (c) provided <i>ABCD</i> forms a parallelogram	
29(e)(ii)	30 cm ²	2		FT the area of <i>their</i> <i>ABCD</i> provided it is a parallelogram. B1 for each	
30	[a =] 32 [b =] 98 [c =] 82	3		B1 for each	
31	Correct ruled net of cuboid	3		B2 for 3 or 4 further correct faces drawn in the correct places or B1 for 1 or 2 further correct faces drawn in the correct places	
32(a)	Hexagon	1			
32(b)	6	1			

Question	Answer	Marks	AO Element	Notes	Guidance
33(a)	24	3		M2 for $\frac{180}{2+13} \times k$ where $k = 1, 2$ or 13 or B1 for $e + i = 180$ soi	
33(b)	15	1		FT if $\frac{360}{\text{their (b)(i)}}$ is an integer	
34	Correct ruled triangle with arcs	2		M1 for correct triangle without arcs or for correct arcs and no lines	
35	85	2		B1 for either angle in alt segment = 58	
36	72	2		B1 for either angle at J or $H = 108$ or angle at $F =$ 72	
37(a)	36	2		M1 for $\left(\frac{8}{12}\right)^2$ or $\left(\frac{12}{8}\right)^2$ oe	

Question	Answer	Marks	AO Element	Notes	Guidance
37(b)	30	3		M2 for $320 \div 16 \times \frac{12}{8}$ oe or M1 for $320 \div 16$	
38	12	2		M1 for $150 = \frac{(n-2) \times 180}{n}$ or $\frac{360}{180-150}$ oe	
39	B1 for $OA = OB = OC = OD$ Radii B1 for $AB = CD$ chords equidistant from centre are equal B1 for SSS implies congruent	3			
40	45	2		B1 for angles at M or K $= 45$ or angle at $L = 90$	
[Total: 132]					



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