

Angles in Polygons

June 2022 Paper 2

Question	Answer	Mark	Mark scheme	Additional guidance
11	39 with reasoning	M1 A1 C1	for a method to find angle ACB eg $180 - 116 - 25$ for 39 for $x = 39$ with reasoning eg <u>Angles</u> in a <u>triangle</u> add up to 180 and Vertically <u>opposite angles</u> are equal or Vertically <u>opposite angles</u> are equal or <u>Angles</u> on a straight <u>line</u> add up to 180 OR The <u>exterior angle</u> of a triangle is <u>equal</u> to the sum of <u>the interior</u> <u>opposite angles</u> and <u>Angles</u> on a straight <u>line</u> add up to 180	$ACB = 39$ or $x = 39$ or $C = 39$ or just 39 is acceptable for this accuracy mark Angle may be shown on diagram if no ambiguity or contradiction The key words underlined must be present. There should be no incorrect reasons given. All reasons given should be used, not just a list of angle facts.

June 2020 Paper 3

Question	Answer	Mark	Mark scheme	Additional guidance
11	110	M1 M1 A1	for use of angles in a quadrilateral add to 360° , eg $360 - 130 - 95 - 65 (= 70)$ for $180 - "70"$ or for $(130 + 95 + 65) - 180$ cao	May be seen in diagram or as a sum to 360° . $(130 + 95 + 65) - 180$ gains M2

November 2022 Paper 3

Question	Answer	Mark	Mark scheme	Additional guidance
13 (a)(i)	40	B1	cao	Underlined words need to be shown.
(ii)	Reason	C1	Reason given <u>Angles</u> in a <u>quadrilateral</u> add up to 360. Accept “4-sided shape”	
(b)	Explanation	C1	Explanation Acceptable examples 190 > 180 It does not add up to 180 80+60+50=190 Angles in a triangle add up to 180 Not acceptable examples One of the angles needs to be less You cannot draw this triangle	

November 2023 Paper 2

Question	Answer	Mark	Mark scheme	Additional guidance
19	78	M1 M1 C2 (C1)	<p>for finding one angle within the triangle is $180 \div 3 (= 60)$</p> <p>for method to use parallel lines, eg $BDE = DBC$ or $BCD + CDE = 180$</p> <p>(dep M2) for $(x =) 78$ with a correct reason relating to parallel lines and one other correct reason given, with no unused reasons.</p> <p>(dep M1) for one correct reason given for their chosen method,</p> <p>angles in an <u>equilateral triangle</u> are equal <u>alternate angles</u> are equal <u>angles</u> in a <u>quadrilateral</u> add up to 360 <u>angles</u> in a <u>triangle</u> add up to 180 <u>Allied angles</u> / <u>Co-interior angles</u> add up to 180</p>	<p>Angles must be clearly labelled on the diagram or otherwise identified. Correct method can be implied from angles on the diagram if no ambiguity or contradiction. If x is clearly identified as 78 award M2 (implied)</p> <p>Underlined words need to be shown; reasons need to be linked to their method, which can be implied from correctly identified angles (stated or written on the diagram).</p>

November 2024 Paper 1

Question	Answer	Mark	Mark scheme	Additional guidance
23	55	P1	for process to find the sum of the interior angles of a pentagon, eg. $180 \times (5 - 2) (= 540)$ oe	Can be implied by the shape correctly divided into triangle and quadrilateral or three triangles with correct angle sums marked.
		P1	for the start to a process of giving each angle in a common form, eg. $d = 3c$ or $e = 2c$ or $x, 3x, 2x$	Can be implied by division by 7 or 1, 1, 3, 2 given in a ratio eg 1 : 2 : 1 : 3
		P1	for process to find the value of c , eg $([540] - 155) \div 7$ oe	Where [540] is what they believe to be the angle sum of the pentagon.
			or for a correct equation in one variable, eg $c + 155 + c + 3c + 2c = [540]$ oe	
		A1	cao	

June 2022 Paper 1

Question	Answer	Mark	Mark scheme	Additional guidance
27	132	M1	for finding an exterior angle eg $360 \div 6 (= 60)$ or $360 \div 5 (= 72)$ or an interior angle eg $180 \times 4 \div 6 (= 120)$ or $180 \times 3 \div 5 (= 108)$	Angles may be shown on the diagram Only award this mark for an angle that is not contradicted
		M1	for a complete method eg $360 - "120" - "108"$ or $"60" + "72"$	
		A1	cao	Answer only award no marks

June 2020 Paper 2

Question	Answer	Mark	Mark scheme	Additional guidance
28	24	M1 A1	for a complete method eg $360 \div 15 (=24)$ cao	If extra steps are shown do not award this mark.