

Properties of Polygons 20 minute test 2

Q	Answer	Mark	Comments
1	Kaidee Parallelograms have supplementary angles which sum to 180 degrees	B1 B1	Mentions property of parallelograms. Mathematical reason included
2(a)	$(180 - 28) \div 2 = 76$	M1	May be indicated on the diagram
	180 – their 76 or their 76 + 28	M1dep	
	104	A1	
2(b)	Base angles of an isosceles triangle are equal and Exterior angle of a triangle is equal to the sum of the remaining angles in the triangle. OR Angles on a straight line sum to 180 degrees and angles in a triangle sum to 180 degrees.	B1 B1	Must have the first reason and then either of the second or third reasons.
3(a)	$(180 - 23 = 157)$ $360 - 157 - 60 - 46$	M1	oe
	97	A1	
3(b)	The sum of the angles in a quadrilateral is 360 degrees and angles on a straight line sum to 180 degrees	B1	Must have both reasons (in either order) to be awarded this mark. (can reference exterior angles instead of angles on a line...).

Q	Answer	Mark	Comments
4(a)(i)	75	B1	
4(a)(ii)	145	B1	
4(b)	Ticks x and 75 are corresponding angles box only	B1	
5	180 – 119	M1	
	61	A1	
6(a)	Hexagon	B1	
6(b)	180 – 120	M1	
	60	A1	
6(b) Alt Method	360 ÷ 6	M1	
	60	A1	
7	360 ÷ 12	M1	
	30	A1	
7 Alt Method	(12 – 2) x 180 ÷ 12 = 150	M1	
	180 – 150		
	30	A1	
8	$3x + 81 = 121 - 2x$	M1	Uses property of opposite angles of non-adjacent sides are equal.
	$5x + 81 = 121$ OR $3x = 40 - 2x$ OR $3x - 40 = -2x$	M1dep	Isolates either x term or numbers.
	$x = 8$	M1	Solves to find x .
	130	A1	Biggest angle correctly identified and substitutes their value of x in.

Q	Answer	Mark	Comments
8 Alt method	$3x + 81 + 3x - 4 + 121 - 2x + 10x + 50 = 360$ $(14x + 248 = 360)$	M1	Uses angles in a quadrilateral sum to 360 degrees. Equation does not need to be simplified.
	$14x = 112$	M1dep	Isolates number term.
	$x = 8$	M1	Solves to find x .
	130	A1	Biggest angle correctly identified and substitutes their value of x in.