Angles - Answers

Key Stage 2: 2004 Paper B

1.

18	Answer in the range 93 degrees to 97 degrees inclusive.	**1m**	

Key Stage 2: 2005 Paper B

1.

21	$x =$ **35°**	**1m**	

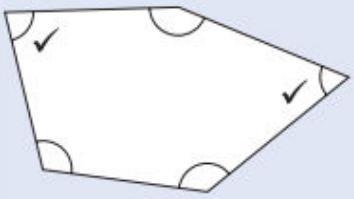
Key Stage 2: 2007 Paper A

1.

25	An explanation (or diagram) which recognises that the sum of two obtuse angles would be greater than 180 degrees, eg: ■ 'An obtuse angle is greater than 90 degrees and the angles of a triangle add up to 180 degrees' ■ 'Two obtuse angles add up to more than 180' ■ '180 degrees is less than two obtuse angles' ■ 'It must have at least two acute angles' ■ 'The shape would need more than 3 sides to join up' ■ 	**1m** U1	***Do not** accept answers that refer only to the properties of obtuse angles **OR** to the angles of a triangle, eg:* ■ *'The angles of a triangle add up to 180 degrees'* ■ *'Obtuse angles are greater than 90 degrees'.* ***Do not** accept vague or incomplete explanations, eg:* ■ *'A triangle cannot have two obtuse angles'* ■ *'Obtuse angles would be too big'* ■ *'You can only have acute angles'.*

Key Stage 2: 2009 Paper B

1.

3	Two angles ticked as shown: 	**1m**	**Do not** award the mark if additional incorrect angles are ticked. Accept alternative unambiguous indications of the correct angles, eg angles circled.

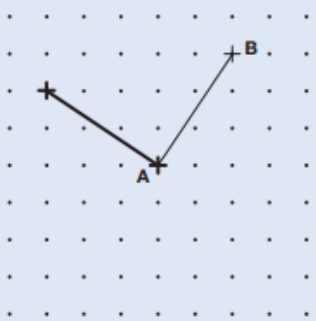
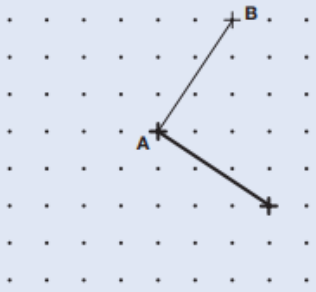
Key Stage 2: 2009 Paper B

2.

18	25	**1m**	

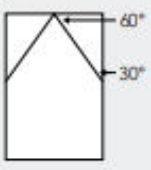
Key Stage 2: 2010 Paper A

1.

19	Line drawn from **A** to one of the two dots marked as shown:  **OR**  	**1m**	Accept slight inaccuracies in drawing (see page 3 for guidance).

Key Stage 2: 2011 Paper A L6

1.

8	**1m**	Indicates No and gives a correct explanation eg • The angles are not the same size • A regular pentagon looks like this, with its angles all the same size  • All the angles should be 108° • It doesn't have rotation symmetry • It's got more sides than a square so all its angles should be obtuse, but they're not	✓ ***Minimally acceptable explanation*** eg • 90 ≠ 150 • Different angles • A regular pentagon doesn't have right angles in it • A regular one can't have 150° angles • It doesn't look the same when it's turned • Not all the angles are obtuse ! ***Incorrect angle size for a regular pentagon given*** Condone alongside a correct response eg, accept • The angles are different, they should be *60° (error, but all equal implied)* • The angles should all be *70° (error)* eg, do not accept • The 90° angles should be 60° *(does not imply the angles should all be the same)* × ***Incomplete explanation*** eg • Not the same • It has two right angles • Two angles are the same • A regular pentagon looks like this  • A regular pentagon doesn't have any vertical lines ! ***Indicates Yes, or no decision made, but explanation clearly correct*** Condone provided the explanation is more than minimal
	2m ***or*** **1m**	60° Shows that the 150° angle can be split into 90° and 60° or Divides the pentagon vertically and shows that half a is 30° or Draws triangles to show a rectangle, labelling the non-right angles on at least one side correctly eg •  or Shows or implies that the angle sum of a pentagon is 540°	

Key Stage 2: 2011 Paper B

1.

9	A **AND** D	**1m**	Letters may be given in either order.

Key Stage 2: 2012 Paper B L6

1.

9	$b = 50$ $a = 20$ As evidence of a correct method, in either part, shows or implies that the angles in one of the triangles are a, b and b eg, in the first question part • 80, 50, 50 seen • (180 – 80) ÷ 2 • (360 – 160) ÷ 2 ÷ 2 eg, in the second question part • 180 – 2 × 80 • (360 – 160 × 2) ÷ 2 eg, correct answers transposed	**1m** **1m** **U1** **1m**	! ***Incomplete or no working shown*** Provided at least one correct angle is credited, award this mark ! In the second question part 80, 80, 20 is insufficient without any indication of the position of the equal angles

Key Stage 2: 2013 Paper B L6

1.

3	Completes all three rows correctly, eg: •	**2m**	! ***Measures*** See guidance (page 7) ✓ ***Side lengths in each row may be given in any order*** ✓ ***Accept correct values with cm omitted*** eg, for the rectangle: • 15 3 15

rectangle	3cm	**3cm**	**15cm**	**15cm**
rhombus	9cm	**9cm**	**9cm**	**9cm**
kite	10cm	**10cm**	**8cm**	**8cm**

or	
Completes two rows correctly	**1m**

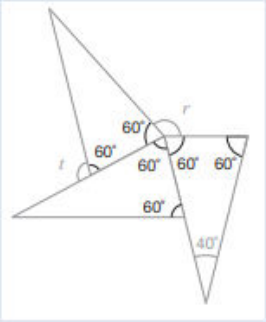
Key Stage 2: 2013 Paper B

1.

21	Award **TWO** marks for correct answer of 170° If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, eg: ■ 50 + 50 + 90 = 190 360 – 190 **OR** ■ 360 – 50 – 50 – 90	**Up to 2m**	Answer need not be obtained for the award of **ONE** mark.

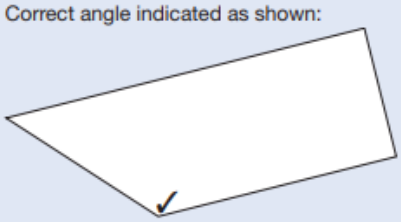
Key Stage 2: 2014 Paper A L6

1.

7	r = 150 **and** t = 110 r **or** t correct **OR** Shows or implies a complete, correct method for both angles, eg: • 40 + 50 + 50 = 180 *(error)* 360 – 50 – 50 – 50 = 210 180 – 50 = 130	**2m** ***or*** **1m**	✓ ***Values must be unambiguously associated with the correct letter for the award of 2m or 1m*** ! ***Answers for r and t transposed*** If r is 110 and t is 150, then award 1m ! ***Follow-through from incorrect base angle seen on the diagram*** Award 1m if both r and t correctly follow through from an incorrect angle seen at base of an isosceles triangle, eg: •  r = 360 – 180 = 180 t = 180 – 60 = 120

Key Stage 2: 2014 Paper A

1.

8	Correct angle indicated as shown: 	**1m**	Accept alternative unambiguous indications, eg correct angle crossed or circled.

Key Stage 2: 2015 Paper A L6

1.

12	Completes all four rows of the table correctly, eg: 90° **45°** **45°** 80° **90°** **10°** 70° **70°** **40°** 70° **55°** **55°** Completes three rows correctly	**2m** ***or*** **1m**	✓ ***Angles within a row in either order*** ✓ ***The bottom two rows may be given in either order*** ! ***Condone omission of degree signs*** ! ***For 2 marks, do not accept correct angles in 3rd row repeated in 4th row, in either order***

Key Stage 2: 2015 Paper A

1.

20a	56	**1m**	
20b	34	**1m**	If the answers to a and b are incorrect, award **ONE** mark if their a plus their b = 90°, provided that b is **not** 45°, 30° or 60°.

Key Stage 2: 2015 Paper B

1.

5	2 **AND** 4	**1m**	Accept alternative unambiguous indications, eg right angles marked on diagrams.

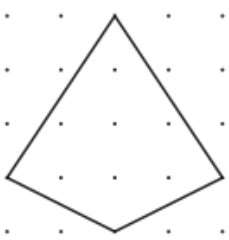
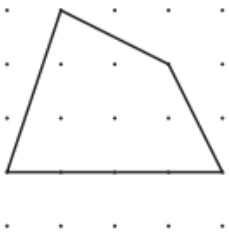
Key Stage 2: 2016 Paper 2 Reasoning - Sample

1.

15	Award **TWO** marks for the correct answer of 104° If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g. • 180 – 38 – 38 = a	**Up to 2m**	Answer need not be obtained for the award of **ONE** mark.

Key Stage 2: 2016 Paper 3 Reasoning - Sample

1.

15	A quadrilateral with three acute angles, e.g.  **OR**  **OR** 	**1m**	Accept inaccurate drawing provided the intention is clear.

Key Stage 2: 2016 Paper 2 Reasoning

1.

17a	160	**1m**	
17b	20	**1m**	If the answers to a and b are incorrect, award **ONE** mark if $a + b = 180°$ unless b is between 33° and 37° inclusive, or 90°

Key Stage 2: 2016 Paper 3 Reasoning

1.

7a	*c* **AND** *e*	**1m**	Letters may be given in either order.
7b	*a* **AND** *d*	**1m**	Letters may be given in either order.

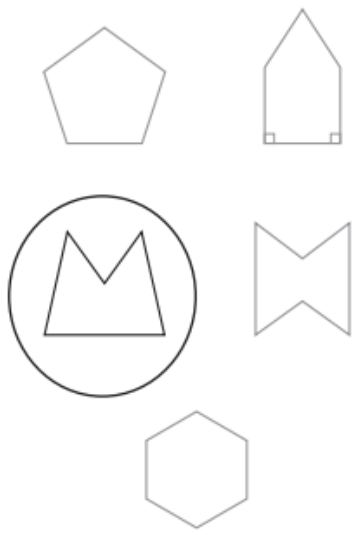
Key Stage 2: 2017 Paper 2 Reasoning

1.

16	540	**1m**	

Key Stage 2: 2017 Paper 3 Reasoning

1.

13	The correct shape circled as shown: 	**1m**	Accept alternative unambiguous positive indications, e.g. shape ticked.

Key Stage 2: 2019 Paper 3 Reasoning

1.

13	An explanation that includes a correct counter example, e.g. • When you double 10° it is not obtuse • 2 × 27° = 54° • Double 45° is a right angle not obtuse **OR** An explanation that demonstrates where the statement in the question is not correct, e.g. • If the acute angle is less than 45° then doubling it will be less than 90°, so it won't be obtuse (more than 90°).	**1m**	**Do not** accept vague or incomplete explanations, e.g. • Sometimes it will be acute • Some acute angles are half an obtuse angle, but not all • When you double an acute angle, you get a right angle **Do not** accept explanations which include incorrect mathematics or incorrect information that is relevant to the explanation, e.g. • 20°C × 2 = 40°C • 20% x 2 = 40%