2D Shapes - Answers

Key Stage 2: 2003 Paper B

1.

Diagram completed correctly as shown:

Accept slight inaccuracies in drawing provided the intention is clear.

Accept slight inaccuracies in drawing provided the intention is clear.

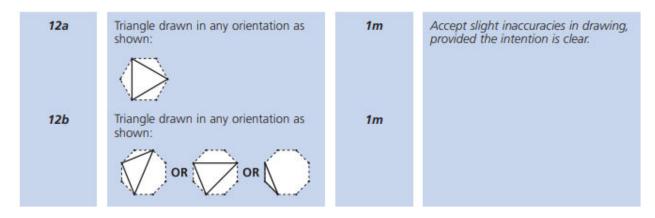
Key Stage 2: 2004 Paper B

1.



Key Stage 2: 2004 Paper B

2.

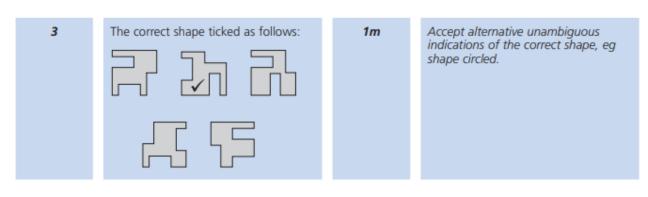


Key Stage 2: 2005 Paper A

6а	B AND D	1m	Both letters must be given. Letters may be given in either order.
6b	C AND E	1m	Both letters must be given. Letters may be given in either order.

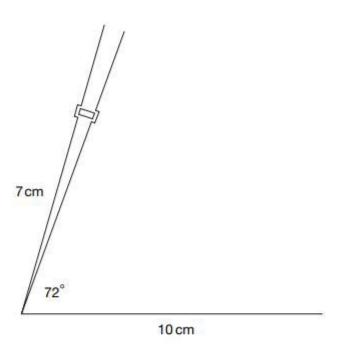
21	Award TWO marks for boxes ticked and crossed as shown:	Up to 2m	Accept alternative unambiguous indications such as Y or N .
	✓		For TWO marks, accept:
	×		✓
	×		
	✓		
			✓
	If the answer is incorrect, award ONE mark for any three boxes correctly completed.		

Key Stage 2: 2005 Paper B

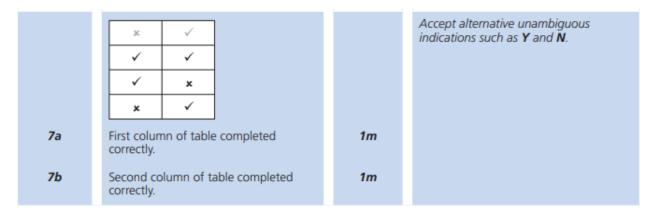


Test A question 21

Markers will use a transparent overlay of this page to mark pupils' answers to this question.



Question	Requirement	Mark	Additional guidance
21	Award TWO marks for a triangle drawn with an angle in the range 70° to 74° inclusive AND length of sloping line in the range 6.9cm to 7.1cm inclusive (ie upper vertex of triangle within inner box on diagram).	Up to 2m	Accept drawings where any side has been extended past a vertex. Accept drawings which do not use the given 10cm base line, provided they have used a line with a length in the range 9.9cm to 10.1cm inclusive.
	If the answer is incorrect, award ONE mark for: a completed triangle drawn with an angle in the range 70° to 74° inclusive. OR		Accept for ONE mark drawings not using the given 10cm base line which have a base line outside the range 9.9cm to 10.1cm, provided they have an angle in the range 70° to 74° inclusive AND a sloping line in the range 6.9cm to 7.1cm inclusive.
	 a completed triangle drawn with an angle in the range 69° to 75° inclusive AND length of sloping line in the range 6.8cm to 7.2cm inclusive. 		Accept for ONE mark drawings of incomplete triangles, provided they have an angle in the range 70° to 74° inclusive AND a sloping line in the range 6.9cm to 7.1cm inclusive.

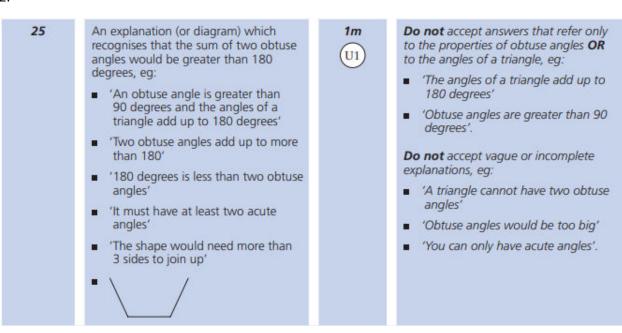


Key Stage 2: 2007 Paper A

1.

17	A AND C	1m	Answers may be given in either order.
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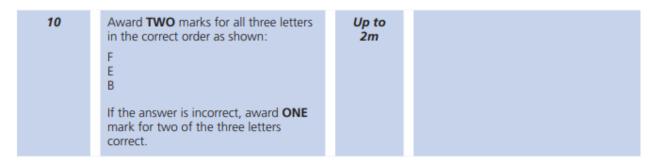
Key Stage 2: 2007 Paper A



Answer in the range 5.4cm to 5.6cm 1m Accept $5\frac{1}{2}$ cm.

Key Stage 2: 2007 Paper B

2.



Key Stage 2: 2007 Paper B

3.

14 B AND C 1m Answers may be given in either order.

Key Stage 2: 2007 Paper B

4.

23a	34	1m	
23b	82	1m	

Key Stage 2: 2008 Paper A

7

An explanation which recognises that a quadrilateral must have particular properties to be a square, eq:

- 'It can only be a square if all the angles are right angles'
- 'It can only be a square if all the sides are equal'

OR

an explanation (or diagram) which recognises that there are quadrilaterals other than squares, eg:

- 'It could be a rectangle'
- 'A rhombus has four sides'
- 'It could be a kite or a trapezium or a parallelogram'
- 'It could be an oblong'
- 'The sides could be unequal'
- 'The angles might be different'



1m



No mark is awarded for circling 'No' alone.

Do not accept vague or incomplete explanations, eg:

- 'It might not be a square'
- 'Not all four-sided shapes are squares'
- 'A four-sided shape is a quadrilateral'
- 'It could be a diamond'.

If 'Yes' is circled but a correct, unambiguous explanation is given, then award the mark.

Key Stage 2: 2008 Paper A

2.

12

D AND E



Letters may be written in either order.

Accept A AND A.

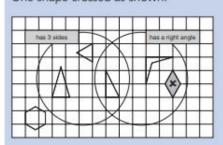
Accept C AND C.

Key Stage 2: 2008 Paper B

1.

2

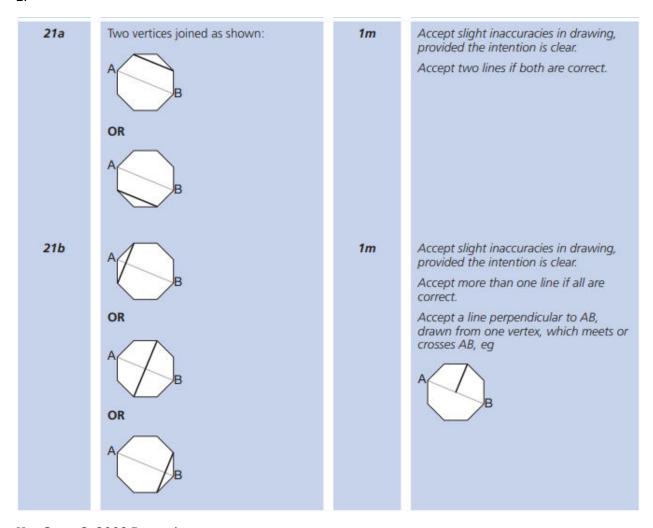
One shape crossed as shown:



1m

Do not award the mark if additional incorrect shapes are indicated.

Accept alternative unambiguous indications of the correct shape, eg shape ticked or circled.

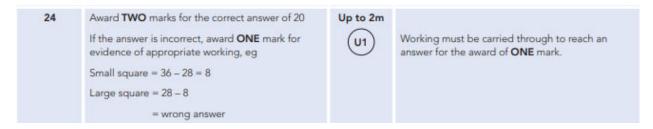


Key Stage 2: 2009 Paper A

13a	rhombus	1m	Accept unambiguous abbreviations or recognisable misspellings.
13b	kite	1m	Accept unambiguous abbreviations or recognisable misspellings.

Key Stage 2: 2009 Paper A

2.

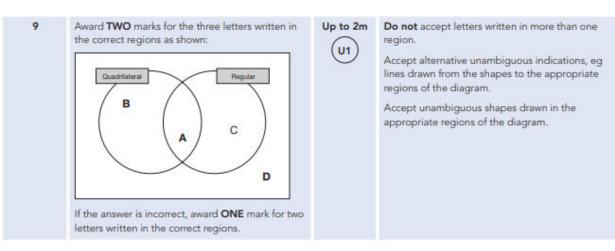


Key Stage 2: 2009 Paper B

1.

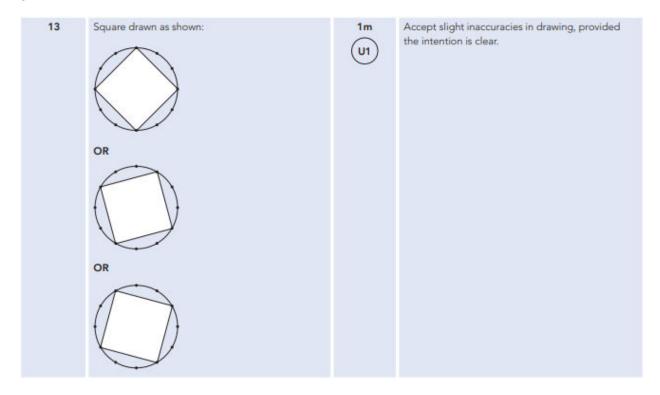


Key Stage 2: 2009 Paper B



Key Stage 2: 2009 Paper B

3.



Key Stage 2: 2010 Paper A

1.

8a	B AND F	1m	Letters may be given in either order.
8b	C AND D AND G	1m	Letters may be given in any order.

Key Stage 2: 2010 Paper A

2.

13a	5	1m	
13b	15	1m (U1)	If the answer is incorrect, award the mark if the answers to 13a and 13b total 20

Key Stage 2: 2010 Paper B

16a	C AND D	1m	Letters may be given in either order.
16b	A AND D	1m	Letters may be given in either order.

1m

Indicates No and gives a correct explanation

- . The angles are not the same size
- A regular pentagon looks like this, with its angles all the same size
- \bigcirc
- 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

eq

- · 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

Shows that the 150° angle can be split into 90° and 60°

or

60°

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



Shows or implies that the angle sum of a pentagon is 540°

Key Stage 2: 2011 Paper A L6

1.

10

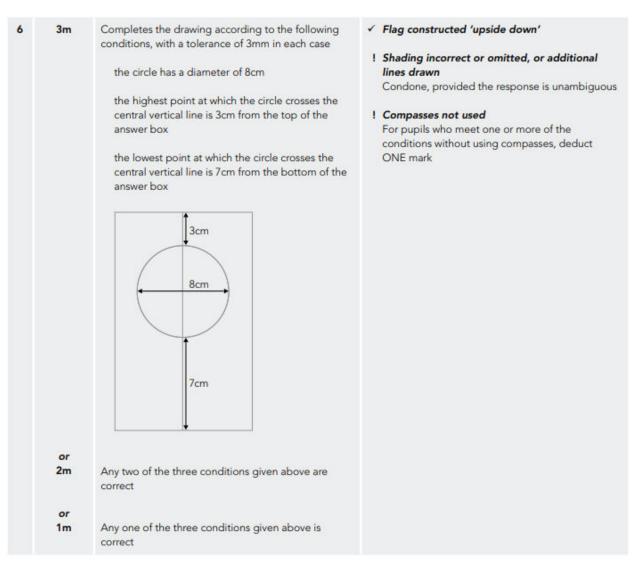
1m

Joins dots to make a triangle that has only one side of 4cm and only one angle of 45°.

! Lengths or angles shown on their triangle(s) Ignore, even if incorrect

** Dots not used

Key Stage 2: 2011 Paper B L6

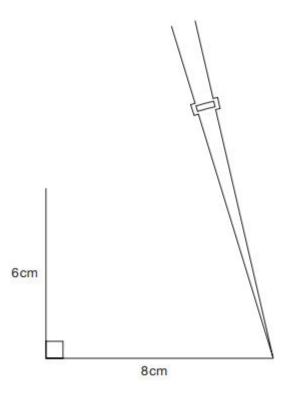


5 A AND D AND E	1m	Letters may be given in any order.	
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Key Stage 2: 2011 Paper A

2.

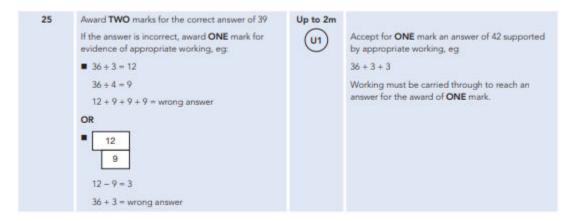
Markers will use a transparent overlay of this page to mark pupils' answers to this question. A copy is enclosed.



Question	Requirement	Mark	Additional guidance
24	Award TWO marks for a quadrilateral drawn with an angle in the range 73° to 77° inclusive AND length of sloping line in the range 9.1cm to 9.3cm inclusive (ie upper vertex of quadrilateral within inner box on diagram). If the answer is incorrect, award ONE mark for: a completed quadrilateral drawn with an angle in the range 73° to 77° inclusive OR a completed quadrilateral drawn with an angle in the range 72° to 78° inclusive AND length of sloping line in the range 9.0cm to 9.4cm inclusive.	Up to 2m	Accept drawings where any side has been extended past a vertex. Accept drawings which do not use the given 8cm base line, provided they have used a line with a length in the range 7.8cm to 8.2cm inclusive. Accept for ONE mark drawings not using the given 8cm base line which have a base line outside the range 7.8cm to 8.2cm, provided they have an angle in the range 73° to 77° inclusive AND a sloping line in the range 9.1cm to 9.3cm inclusive. Accept for ONE mark drawings of incomplete quadrilaterals, provided they have an angle in the range 73° to 77° inclusive AND a sloping line in the range 9.1cm to 9.3cm inclusive.

Key Stage 2: 2011 Paper A

3.

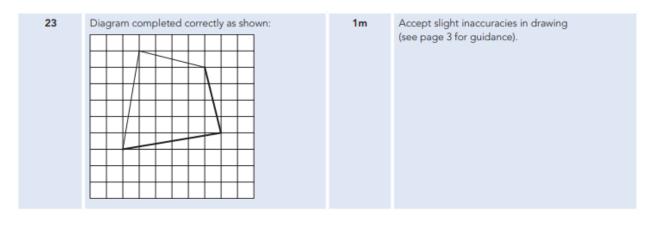


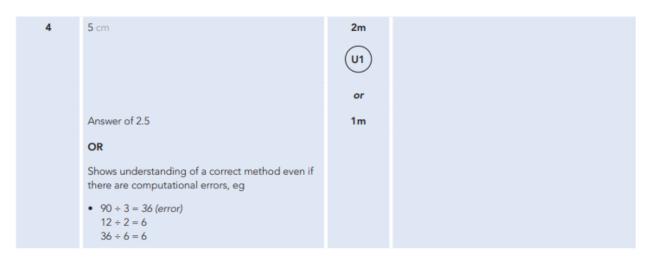
Key Stage 2: 2011 Paper B

1.

14a	E	1m	
14b	D	1m	

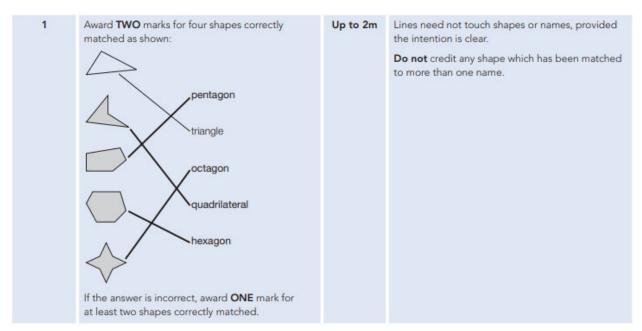
Key Stage 2: 2011 Paper B



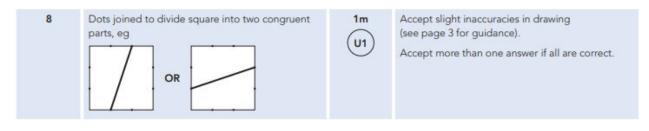


Key Stage 2: 2012 Paper A

1.



Key Stage 2: 2012 Paper A



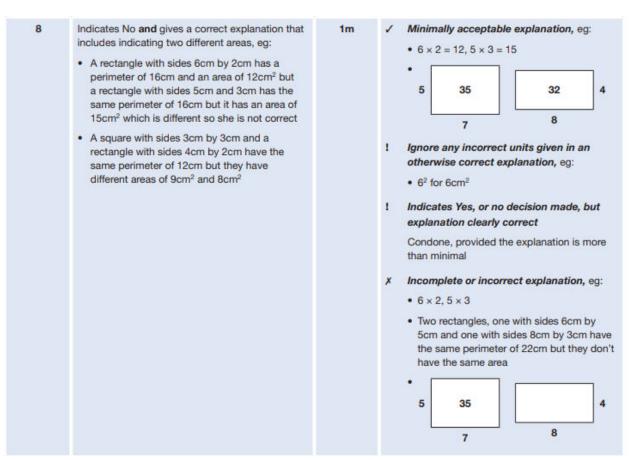
6a	A AND B AND D	1m	Letters may be given in any order.
6b	A AND C	1m	Letters may be given in either order.

Key Stage 2: 2012 Paper B

2.



Key Stage 2: 2013 Paper A L6



Key Stage 2: 2014 Paper A

1.

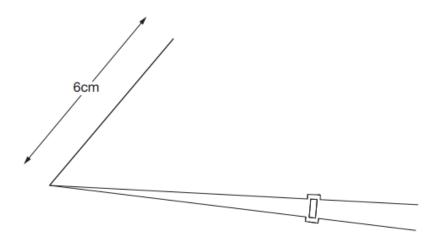
14	Award TWO marks for all four boxes ticked or crossed correctly as shown:	Up to 2m	Accept alternative unambiguous indications eg Y or N. For TWO marks accept:	
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Key Stage 2: 2014 Paper B

10	Award TWO marks for the correct answer of B AND C	Up to 2m	Letters may be given in either order.
	If the answer is incorrect, award ONE mark for:		
	■ B only		
	OR		
	■ C only		

Paper 2: question 22 copy of overlay

Markers will use a transparent overlay of this diagram to mark children's answers to question 22. The overlay is attached to the printed version of this mark scheme.



22

Award **TWO** marks for a triangle drawn with an angle in the range 53° to 57° inclusive **AND** length of base line in the range 8.2cm to 8.4cm inclusive (ie lower vertex of the triangle within the inner box on the diagram, see overlay).

If the answer is incorrect, award ONE mark for:

 a completed triangle drawn with an angle in the range 53° to 57° inclusive.

OR

 a completed triangle drawn with an angle in the range 52° to 58° inclusive AND length of base line 8.1cm to 8.5cm inclusive.

Up to 2m

Accept drawings where any side has been extended past a vertex.

Accept drawings which do not use the given 6cm line, provided they have used a line with a length in the range 5.9cm to 6.1cm inclusive.

Accept for **ONE** mark drawings not using the given 6cm line which have used a line **outside** the range 5.9cm to 6.1cm inclusive, provided they have an angle in the range 53° to 57° inclusive **AND** a base line in the range 8.2cm to 8.4cm inclusive.

Accept for **ONE** mark drawings of **incomplete triangles**, provided they have an angle in the range 53° to 57° inclusive **AND** a base line in the range 8.2cm to 8.4cm inclusive.

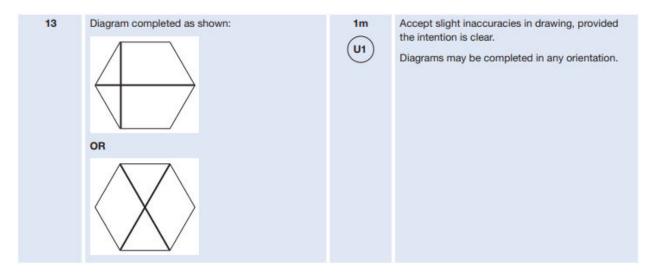
Key Stage 2: 2015 Paper A

1.

12a	Answer in the range 65mm to 69mm inclusive.	1m
12b	Answer in the range 123° to 127° inclusive.	1m

Key Stage 2: 2015 Paper A

2.



Key Stage 2: 2016 Paper 2 Reasoning - Sample

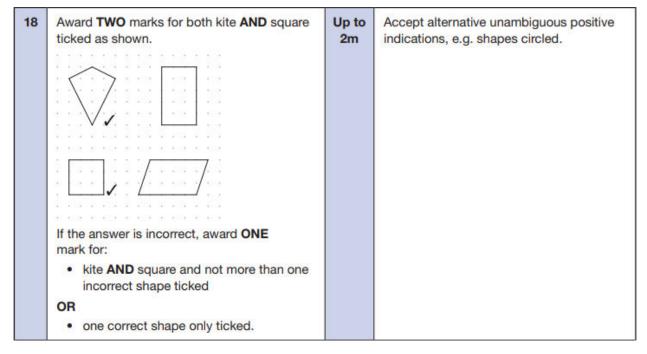
1.

9a	Answer in the range 5.5cm to 5.9cm inclusive.	1m	
9b	Answer in the range 143° to 147° inclusive .	1m	

Question 9b commentary: Some measures questions specify the unit to be used. Where the unit is given in the question lozenge and in the answer box, it must be used. If pupils express their answers using a different unit, e.g. as 57mm in the first part of this question, the mark will not be awarded.

Key Stage 2: 2016 Paper 3 Reasoning

1.



Key Stage 2: 2017 Paper 3 Reasoning

1.

11	32	1m	

Key Stage 2: 2017 Paper 3 Reasoning

22	Award TWO marks for the correct answer of 7	Up to 2m	
	If the answer is incorrect, award ONE mark for evidence of an appropriate method, e.g.		Answer need not be obtained for the award of ONE mark.
	 18 + 9 + 2 widths = 34 + 1 width 27 + 2 widths = 34 + 1 width 27 + 1 width = 34 34 - 27 		Award ONE mark for a method which uses algebraic representation correctly, e.g. • 34 + w = 18 + w + 9 + w 34 + w = 27 + w + w
	OR		34 + W = 27 + W + W
	• 34 – (18 + 9)		

9	108	1m	
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Key Stage 2: 2018 Paper 3 Reasoning

2.

14 An explanation showing an understanding:

 that this specific triangle has angles 70, 70 and 40

OR

 of the properties of an equilateral triangle – all angles are equal (60°)

and therefore that this triangle cannot be equilateral, e.g.

- The angles aren't 60°
- . There is not a 60° angle
- It has two different angles (70° and 40°) so it can't be equilateral
- · The angles aren't the same
- An equilateral triangle has 60° + 60° + 60°
- All the angles are the same in an equilateral triangle
- · It's an isosceles triangle.

(In the context of this question, the term isosceles triangle is treated as not including equilateral triangles as a special type, as the national curriculum does not specify this at key stage 2.)

1m Do not accept vague or incomplete explanations, e.g.

- The other angle is 70°
- They aren't (all) the same. (No reference to angles)
- An equilateral triangle has equal angles. (Does not say all.)

Do not accept explanations which include incorrect mathematics or incorrect information that is relevant to the explanation, e.g.

 \bullet 40 + 70 = 110 + 70 = 180

Award **TWO** marks for a completed triangle that has **all** of the following three points:

- an angle in the range 33° to 37° inclusive for the angle marked 35°
- an angle in the range 88° to 92° inclusive for the right angle
- the triangle has been drawn on an 8cm line (either on the given line or a line drawn), provided they have constructed both angles within the tolerance of the line 7.9cm to 8.1cm.

If the answer is incorrect, award **ONE** mark for a completed triangle and two of the three points correct.

Up to 2m

Accept drawings where any side has been extended past a vertex.

When considering whether the triangle is completed, **do not** accept:

 a quadrilateral or another shape drawn

OR

 a curved line that is used to complete the shape

OR

sides not meeting to form a vertex.

21	Rectangle divided, as shown:	1m	Accept slight inaccuracies in drawing provided the intention is clear.
	OR		
	OR		
	OR		

Key Stage 2: 2019 Paper 3 Reasoning

22	10.5 (cm)	1m	Accept $10\frac{1}{2}$
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