Name:

Maths Assessment Year 5: Geometry

Properties of Shapes

1. Identify 3D shapes, including cubes and other cuboids, from 2D representations.
2. Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.
3. Draw given angles, and measure them in degrees.
4. Identify: angles at a point and one whole turn; angles at a point on a straight line and a turn; other multiples of 90°.
5. Use the properties of rectangles to deduce related facts and find missing lengths and angles.
6. Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.

Position and Direction

1. Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.

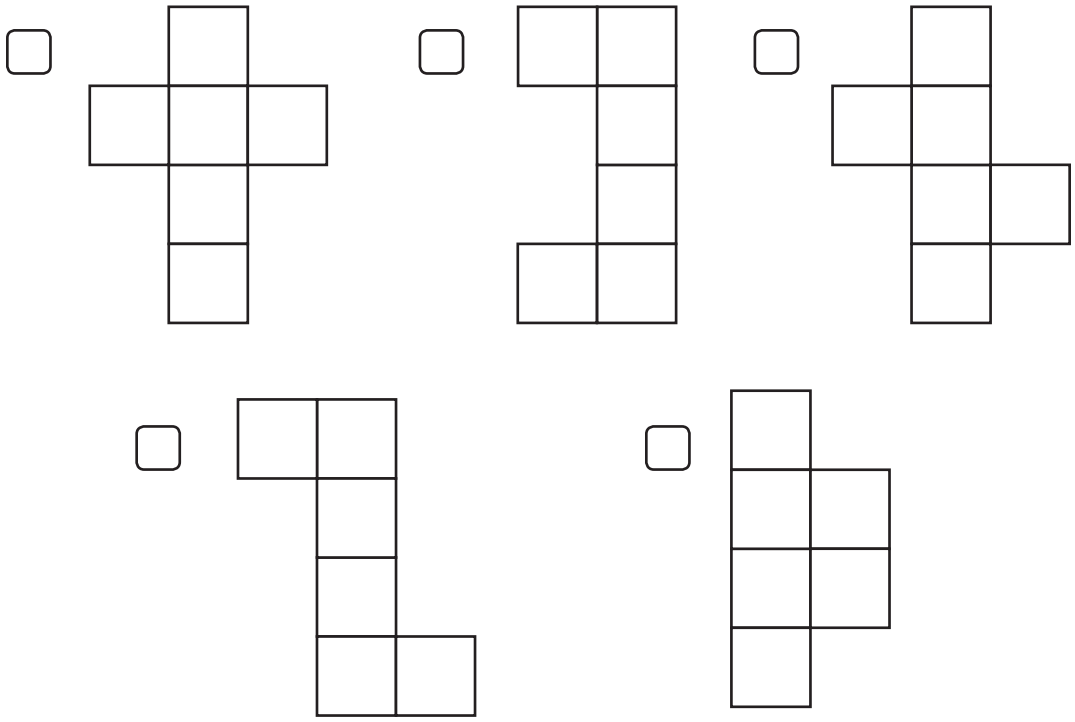
Name: Date:

25 total marks

Maths Assessment Year 5: Geometry - Properties of Shapes

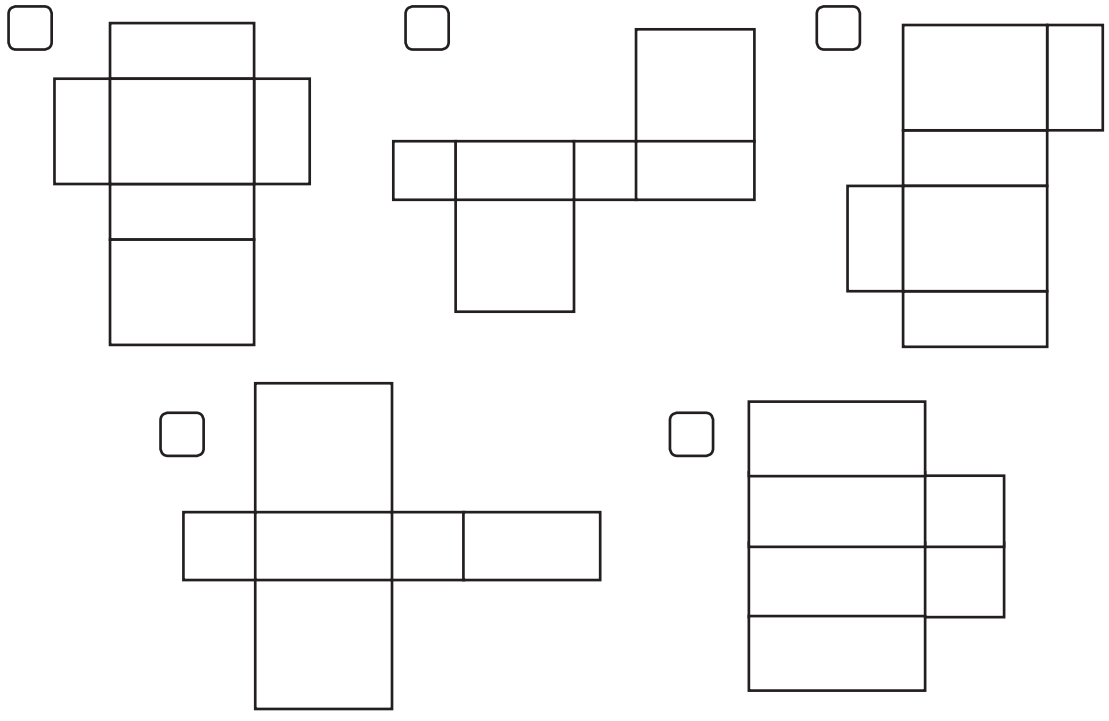
1. Identify 3D shapes, including cubes and other cuboids, from 2D representations.

a) Tick all the nets which will fold to make a cube:



2 marks

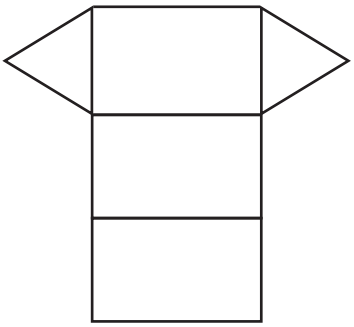
b) Tick all the nets which will fold to make a cuboid:



2 marks

Total for this page

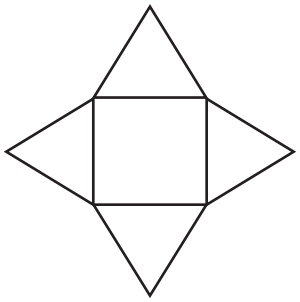
c) Draw a circle around the correct name for the nets of these 3D shapes:



Square based pyramid

Triangular prism

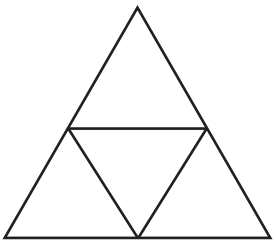
Tetrahedron



Square based pyramid

Triangular prism

Tetrahedron



Square based pyramid

Triangular prism

Tetrahedron

3 marks

2. Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.

For each time, say whether the hands of the clock make an acute, obtuse or reflex angle, turning clockwise from the big hand to the small. Circle the correct answer.

a) 5 o'clock

acute	obtuse	reflex

b) 10 o'clock

acute	obtuse	reflex

c) 1 o'clock

acute	obtuse	reflex

3 marks

Total for this page

3. Draw given angles, and measure them in degrees.

a) Using a ruler and an angle measurer (protractor), draw an angle of 58°. Draw it from either side of the line:

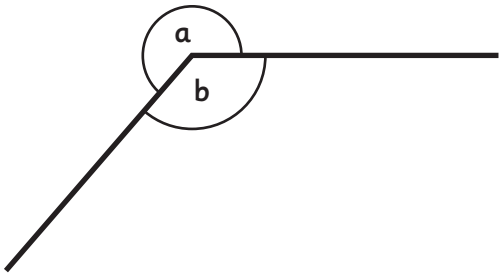
1 mark

b) Using a ruler and an angle measurer (protractor), draw an angle of 127°. Draw it from either side of the line:

1 mark

4. Identify: angles at a point and one whole turn; angles at a point on a straight line and a turn; other multiples of 90°.

a) What is the size of angle **a** if angle **b** is 138°?

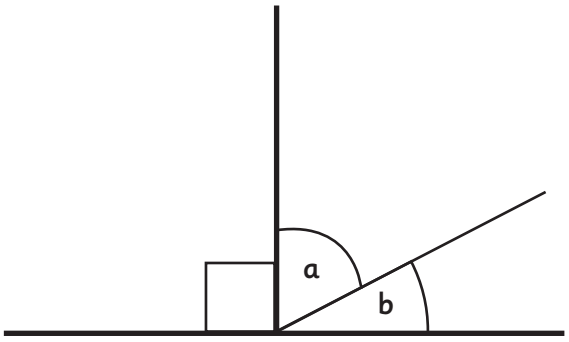


Angle **a** =

1 mark

Total for this page

b) What is the size of angle **a** if angle **b** is 37°?

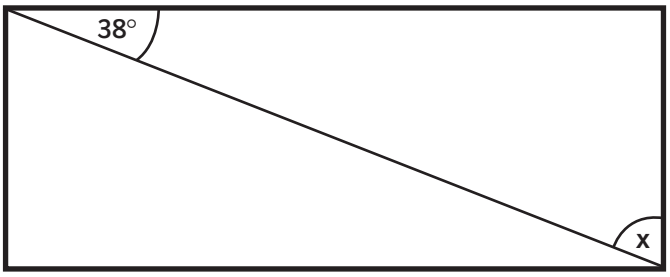


Angle **a** = ☐

1 mark

5. Use the properties of rectangles to deduce related facts and find missing lengths and angles.

a) In this angle, what is the measurement of angle **x**?



Not drawn to scale

Angle **x** = ☐

1 mark

b) If a rectangle has an area of 36 cm², give 2 examples of what the perimeter could be:

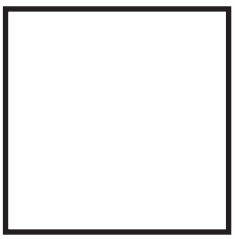
	Length	Width	Perimeter
Rectangle 1 (Area 36 cm²)			
Rectangle 2 (Area 36 cm²)			

2 marks

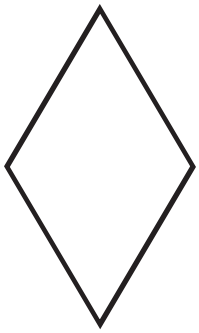
Total for this page

6. Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.

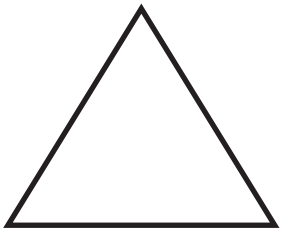
Put a tick inside all shapes which are regular shapes:



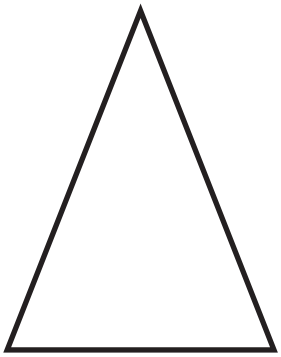
square



rhombus

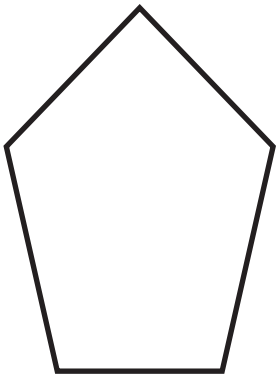


equilateral triangle

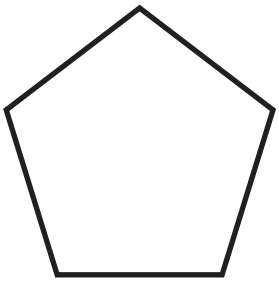


isosceles triangle

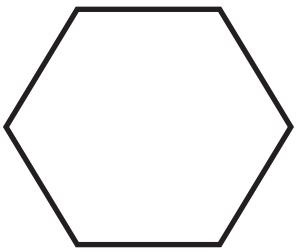
rectangle



pentagon

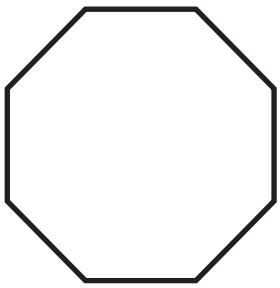


pentagon



hexagon

hexagon



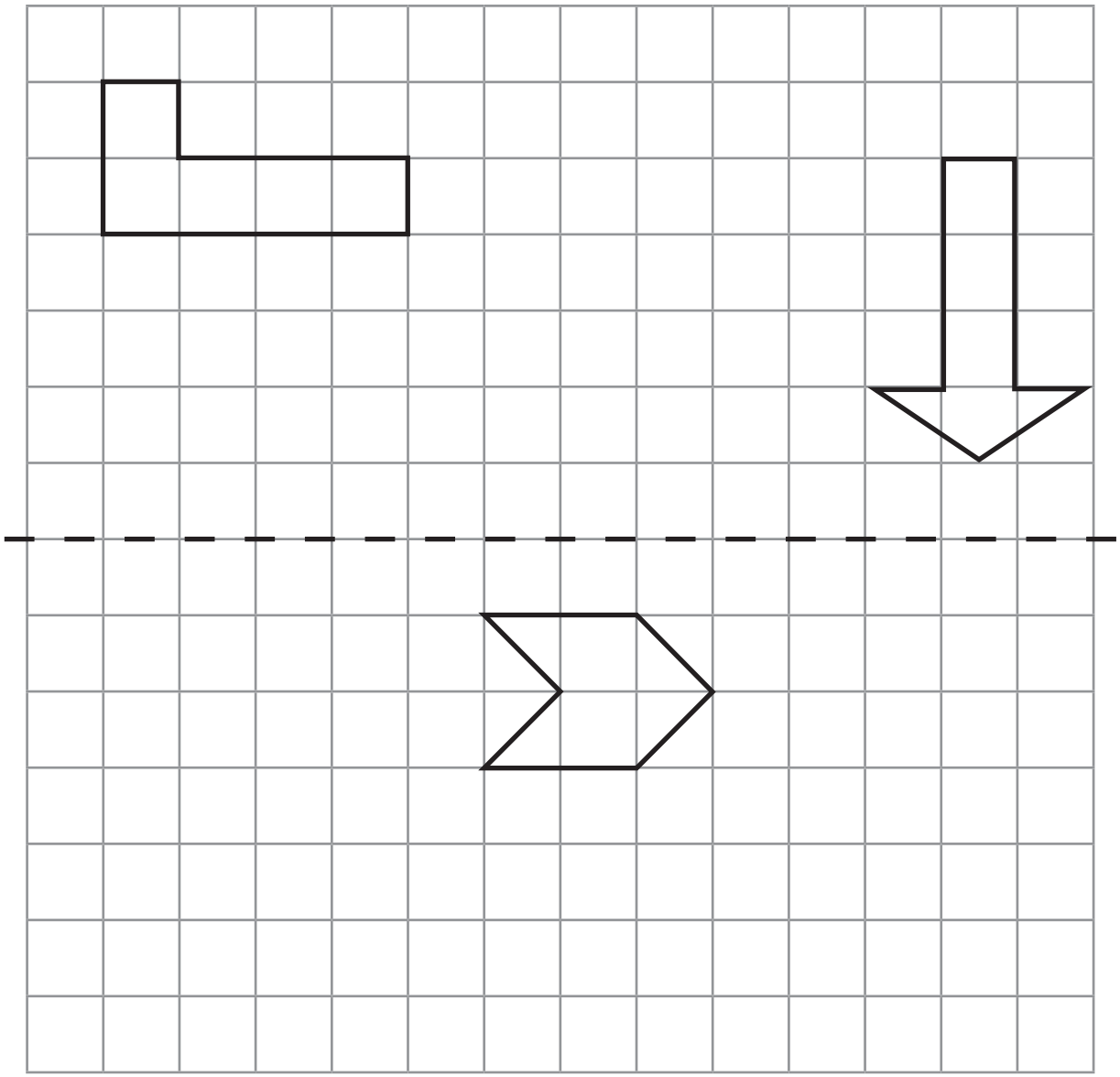
octagon

3 marks

Total for this page

1. Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.

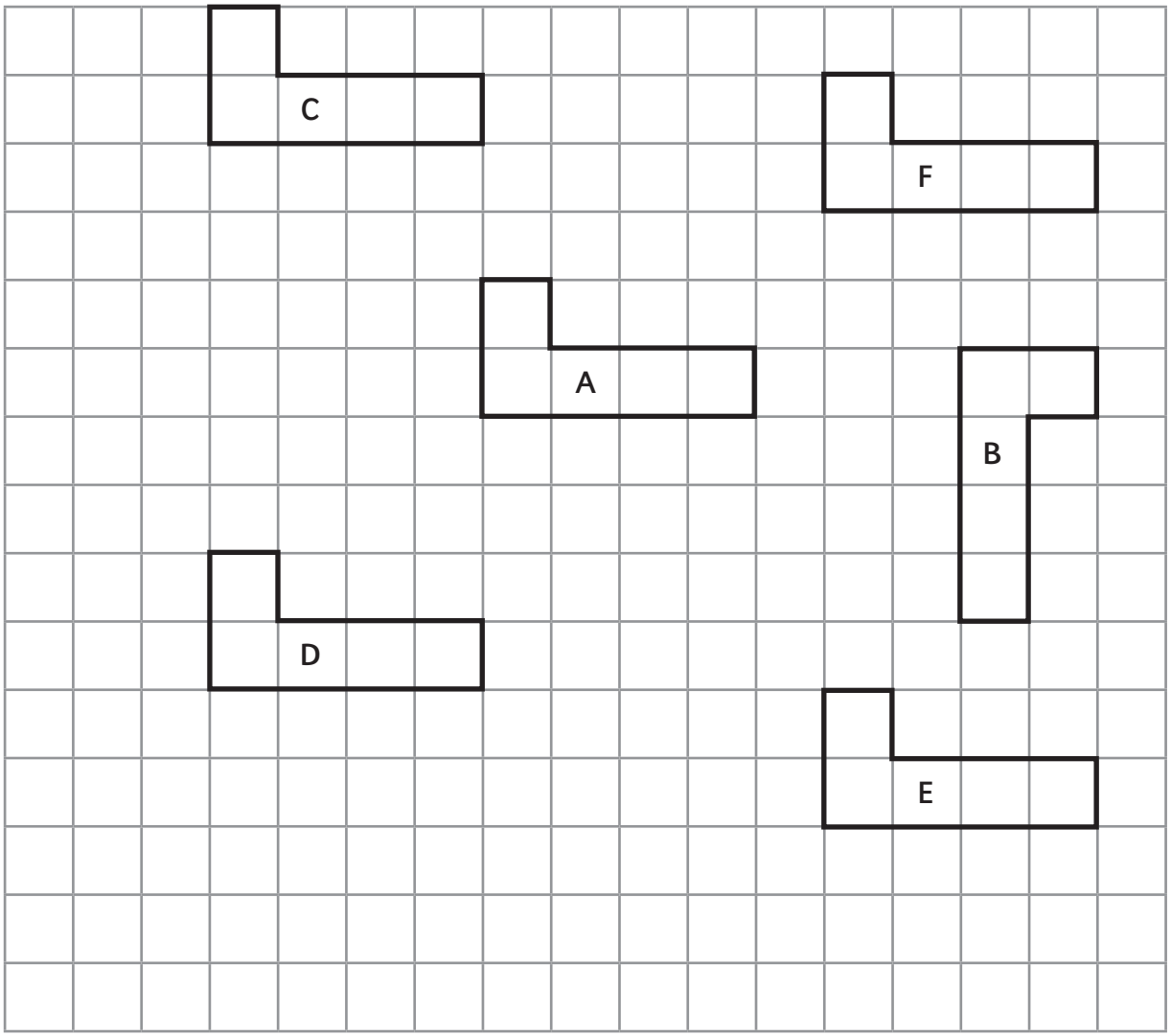
a) Reflect these shapes across the horizontal line of symmetry:



3 marks

Total for this page

Say which shape has been translated from shape **A**:



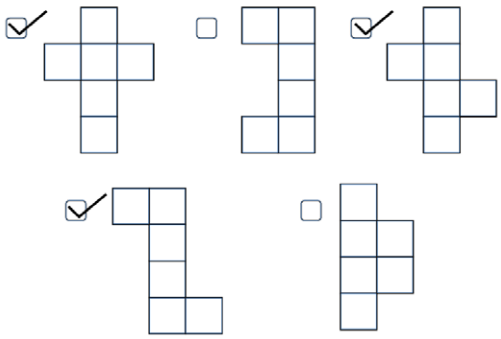
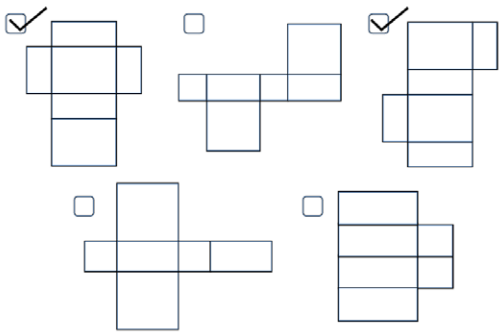
b) From **A**: 4 down, 4 left

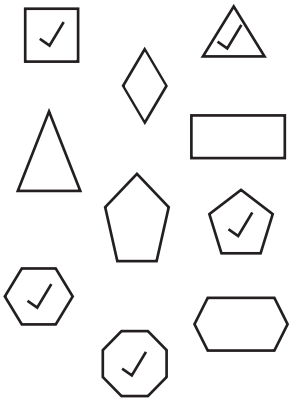
c) From **A**: 3 up, 5 right

2 marks

Total for this page

Answer Sheet: Maths Assessment Year 5: Geometry - Properties of Shapes

question	answer	marks	notes
1. Identify 3D shapes, including cubes and other cuboids, from 2D representations.			
a		2	2 marks if these 3 nets identified but NO others ticked Award 1 mark if all ticked but any other incorrectly ticked Award 1 mark if 2 of the 3 correct nets ticked and no others
b		2	2 marks if these 2 nets identified but NO others ticked Award 1 mark if both ticked but any other incorrectly ticked Award 1 mark if 1 of the 2 correct nets ticked and no others
c	Shape 1: Triangular prism	1	
	Shape 2: Square based pyramid	1	
	Shape 3: Tetrahedron	1	
2. Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.			
a	5 o'clock = **obtuse**	1	
b	10 o'clock = **reflex**	1	
c	1 0'clock = **acute**	1	
3. Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.			
a	Accept an angle drawn from either end within the range 56˚ to 60˚ (inclusive)	1	
b	Accept an angle drawn from either end within the range 125˚ to 129˚ (inclusive)	1	
4. Identify: angles at a point and one whole turn (total 360˚); angles at a point on a straight line and a turn (total 180˚); other multiples of 90˚.			
a	222˚	1	
b	53˚	1	

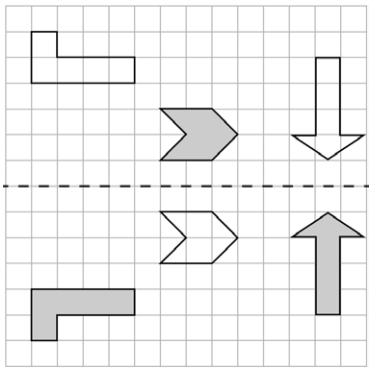
<table>
<tr><th>question</th><th>answer</th><th>marks</th><th>notes</th></tr>
<tr><td colspan="4">5. Use the properties of rectangles to deduce related facts and find missing lengths and angles.</td></tr>
<tr><td>a</td><td>52°</td><td>1</td><td></td></tr>
<tr><td>b</td><td>Any 2 from the following:<table><tr><td>length</td><td>width</td><td>perimeter</td></tr><tr><td>12 cm</td><td>3 cm</td><td>30 cm</td></tr><tr><td>6 cm</td><td>6 cm</td><td>24 cm</td></tr><tr><td>36 cm</td><td>1 cm</td><td>74 cm</td></tr><tr><td>9 cm</td><td>4 cm</td><td>26 cm</td></tr></table></td><td>2</td><td>1 mark for each row that has all the correct values</td></tr>
<tr><td colspan="4">6. Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.</td></tr>
<tr><td></td><td>  </td><td>up to 3 marks</td><td>3 marks for all 5 correctly identified and no others ticked

2 marks for all 5 correctly identified but 1 other ticked incorrectly

2 marks for 4 correctly ticked but 1 other ticked incorrectly

1 mark for 3 correctly ticked and no others ticked</td></tr>
</table>

Answer Sheet: Maths Assessment Year 5: Geometry - Position and Direction

<table>
<tr><th>question</th><th>answer</th><th>marks</th><th>notes</th></tr>
<tr><td colspan="4">1. Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.</td></tr>
<tr><td>a</td><td>  </td><td>3</td><td>Shaded shapes show the reflected positions</td></tr>
<tr><td>b</td><td>Shape D</td><td>1</td><td></td></tr>
<tr><td>c</td><td>Shape F</td><td>1</td><td></td></tr>
<tr><td colspan="2"></td><td>Total 25</td><td></td></tr>
</table>