Name:

Maths Assessment Year 5 Term 2: Geometry

Properties of Shapes

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

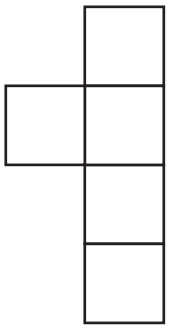
Name: Date:

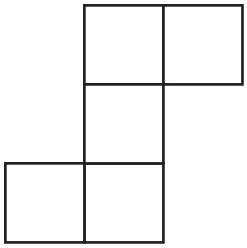
27 total marks

Maths Assessment Year 5 Term 2: Geometry - Properties of Shapes

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

a) Complete these nets so that they will make a cube:

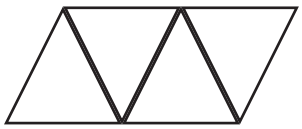




2 marks

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

☐



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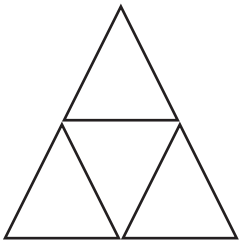

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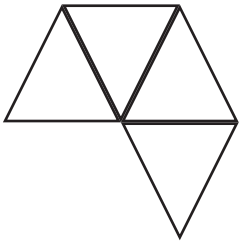
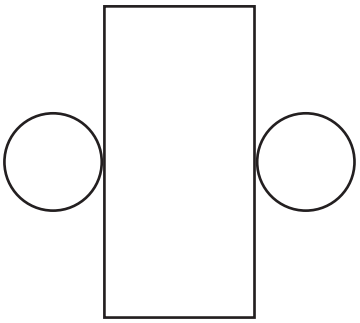
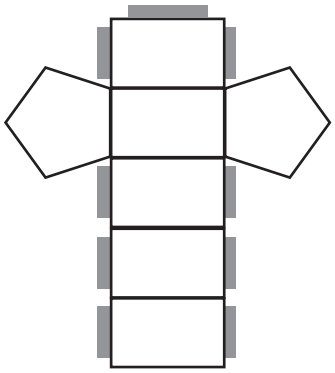


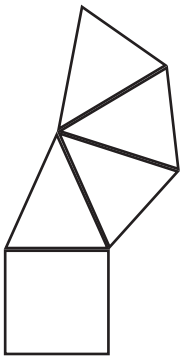
2 marks

Total for this page

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





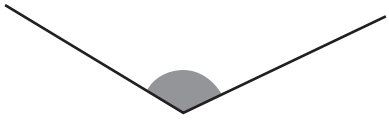


Cone	Hexagonal Prism	Square based pyramid
Cylinder	Cuboid	Triangular prism
Cube	Pentagonal prism	Tetrahedron

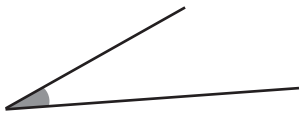
3 marks

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

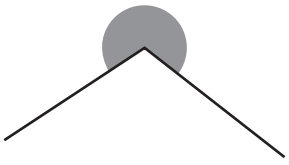
a) Draw a line to match each angle to the description:



acute



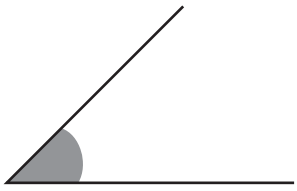
Obtuse



Reflex

3 marks

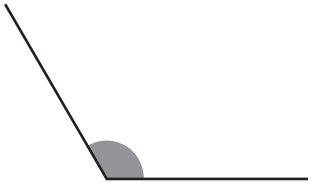
b) Estimate the size of this angle. Answer to the nearest 10^0. Do not use a protractor.



1 mark

Total for this page

c) Draw an angle larger than the given angle. Do not use a protractor.



1 mark

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

a) Using a ruler and an angle measurer (protractor), draw an angle of 13°. Draw it from either side of the line:

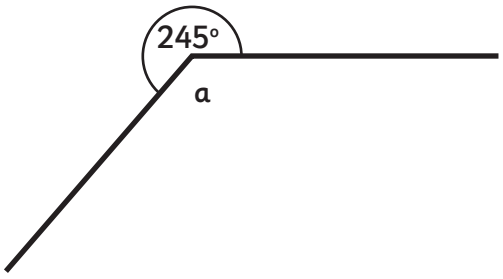
1 mark

b) Using a ruler and an angle measurer (protractor), draw an angle of 164°. 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) Calculate the size of angle a. Do not measure.

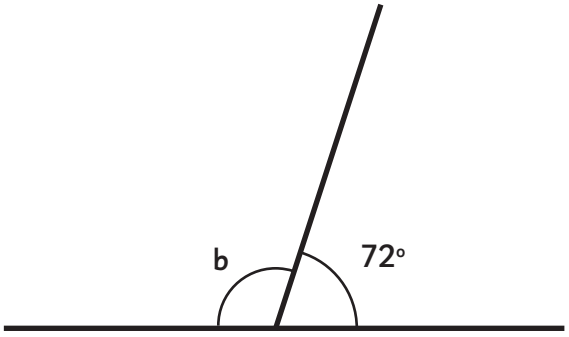


1 mark

Angle **a** =

Total for this page

b) Calculate the size of angle b. Do not measure.

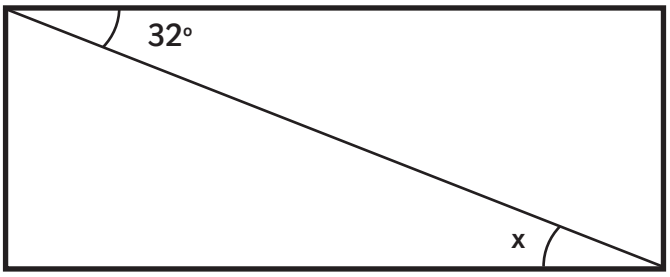


Angle **b** = ☐

1 mark

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

a) In this angle, calculate the size of angle **x**:



Not drawn to scale

Angle **x** = ☐

1 mark

b) If a rectangle has a perimeter of 24cm, give 2 examples of what the area could be:

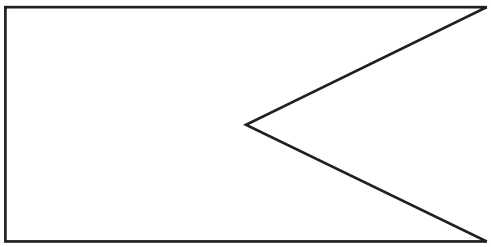
	Length	Width	Area
Rectangle 1 (Perimeter 24cm)			
Rectangle 2 (Perimeter 24cm)			

2 marks

Total for this page

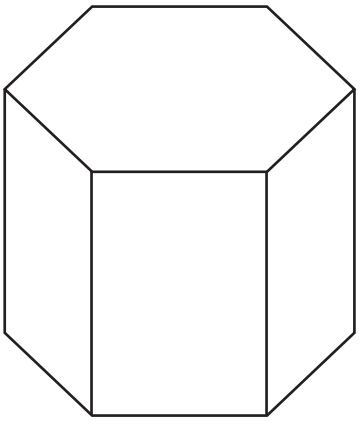
6. Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.

a) Explain why this shape is irregular:



1 mark

b) In this hexagonal prism, which faces are regular and which are irregular?



Regular Faces _____

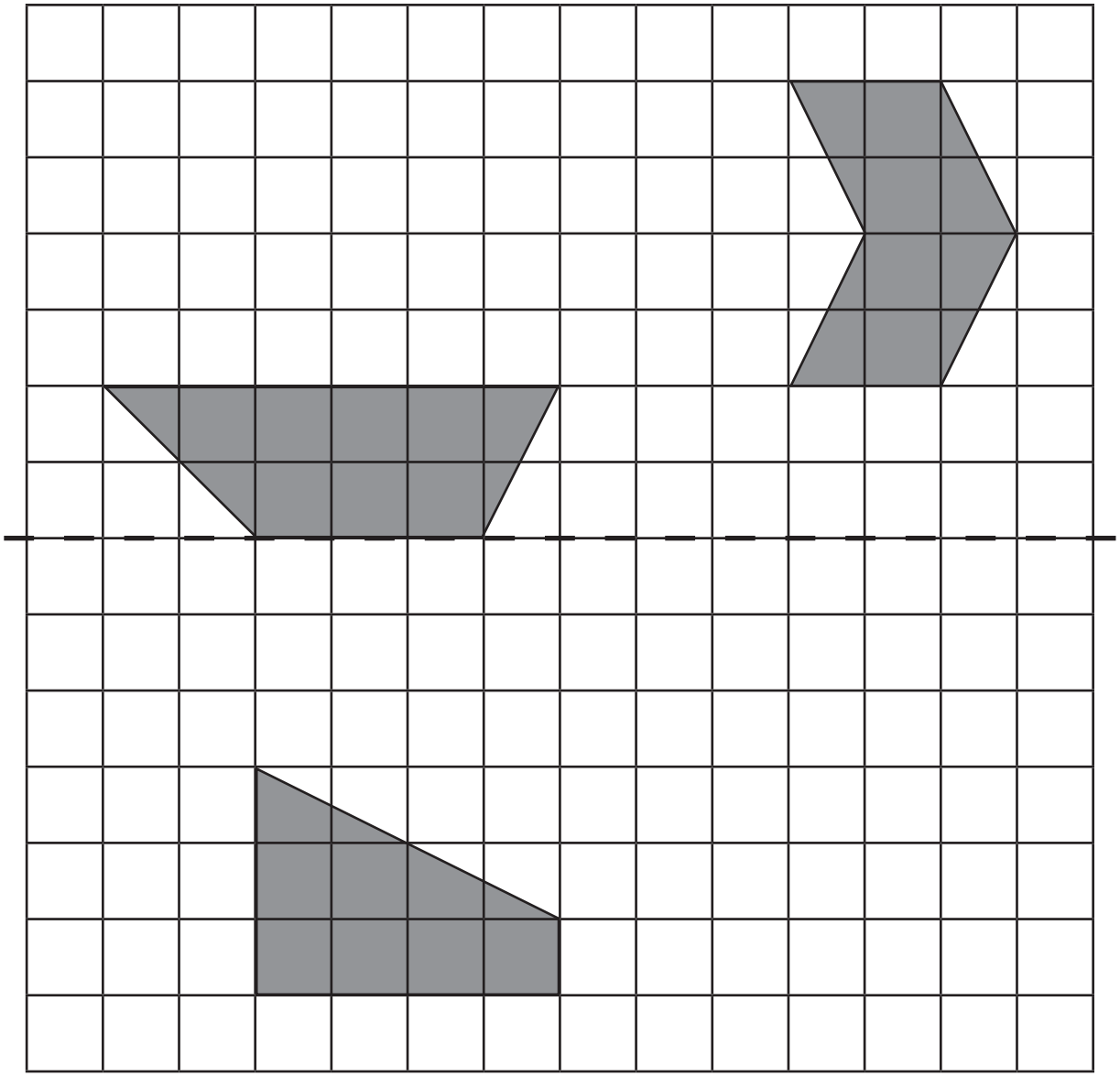
Irregular Faces _____

2 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

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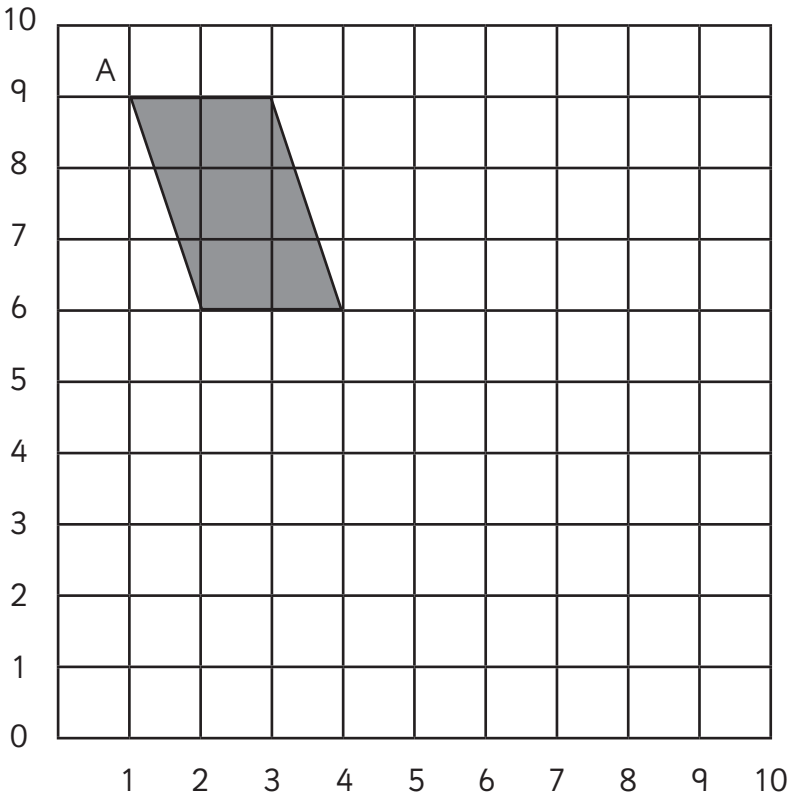
b) The parallelogram is translated so point A moves to (6,4). Draw the parallelogram in its new position.



2 marks

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Answer Sheet: Maths Assessment Year 5 Term 2: Geometry - Properties of Shapes

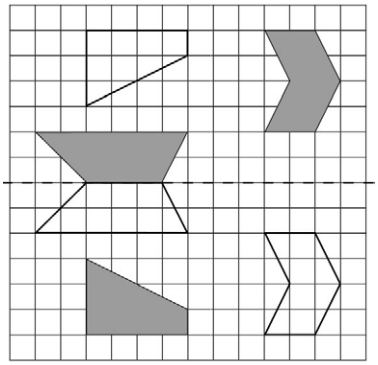
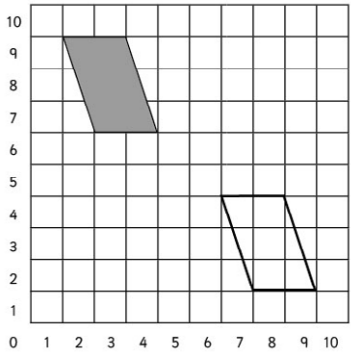
question	answer	marks	notes
1. Identify 3-D shapes, including cubes and other cuboids, from 2-D representations.			
a	Shape 1: 1 square added anywhere on the right hand side of the net. Shape 2: 1 square added to the top or bottom of the centre column of the net.	2	1 mark for each correct answer. Answers other than those given which are correct are awarded the mark.
b	First 2 ticked	2	2 marks if these 2 nets identified but the other not ticked Award 1 mark if all 3 ticked Award 1 mark if only one correct ticked and no others ticked
c	Shape 1: Cylinder	1	
	Shape 2: Pentagonal prism	1	
	Shape 3: Square-based pyramid	1	
2. Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.			
a	Shape 1 = **obtuse** Shape 2 = **acute** Shape 3 = **reflex**	3	Award 1 mark for each correct answer.
b	40°C or 50°C	1	
c	Angle clearly larger than the given angle wherever it is drawn.	1	
3. Draw given angles, and measure them in degrees.			
a	Accept an angle drawn from either end within the range 11° to 15° (inclusive)	1	
b	Accept an angle drawn from either end within the range 162° to 166° (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	115°	1	
b	108°	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>32°</td><td>1</td><td></td></tr>
<tr><td>b</td><td>Any 2 example areas where the perimeter is 24cm. Common examples:
<table>
<tr><td>length</td><td>width</td><td>perimeter</td></tr>
<tr><td>2 cm</td><td>10 cm</td><td>20 cm^2</td></tr>
<tr><td>3 cm</td><td>9 cm</td><td>27 cm^2</td></tr>
<tr><td>4 cm</td><td>8 cm</td><td>32 cm^2</td></tr>
<tr><td>5 cm</td><td>7 cm</td><td>35 cm^2</td></tr>
</table></td><td>2</td><td>Accept decimals if used.

Accept 6x6 as a square is a special rectangle.</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>a</td><td>The sides are not all equal and the angles are not all equal.</td><td>1</td><td>1 mark for both or either property.</td></tr>
<tr><td>b</td><td>Hexagons can be regular

Oblongs are irregular</td><td>2</td><td>1 mark for naming the regular shape and 1 for naming the irregular shape.

Allow marks for stating the hexagon is irregular so it is irregular or that the rectangle is a square so it is regular.</td></tr>
</table>

question	answer	marks	notes
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		3	White shapes show the reflected positions
b		2	2 marks for correct answer. 1 mark for a shape with 1 corner on (6,4).
		Total 27	