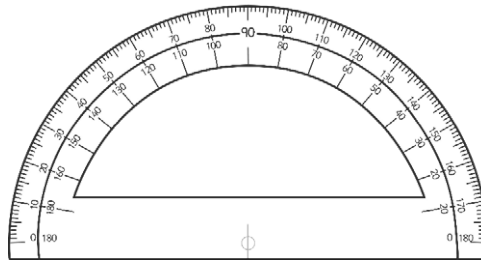


Name:

Maths Assessment Year 6 Term 2: Geometry - Properties of Shapes

You will need a protractor (angle measurer) and ruler for this task.



1. Draw 2D shapes using given dimensions and angles.
2. Recognise, describe and build simple 3D shapes, including making nets.
3. Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons.
4. Illustrate and name parts of circles and know the relationship between diameter and radius.
5. Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.

Name:

Date:

40
total marks



Maths Assessment Year 6 Term 2: Geometry - Properties of Shapes

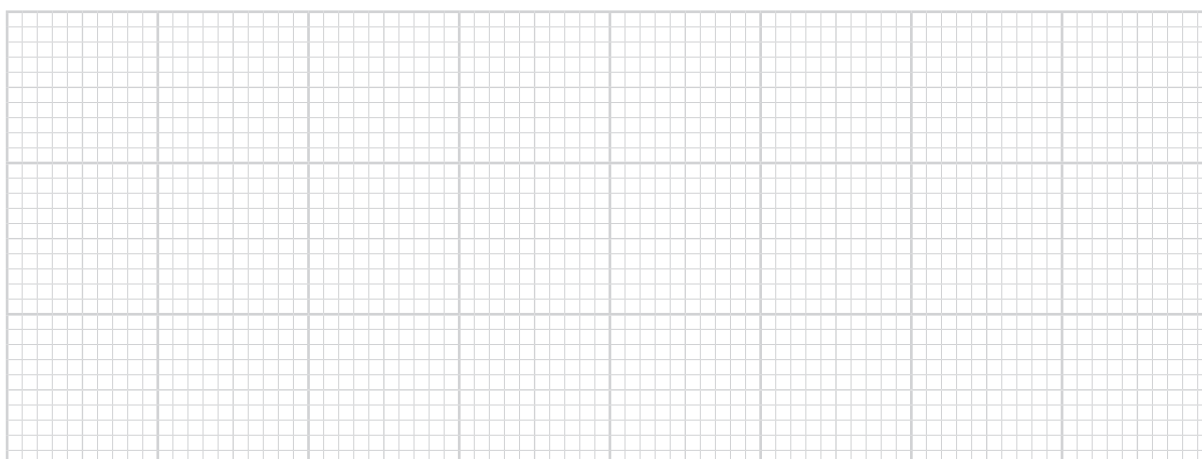
1. Draw 2D shapes using given dimensions and angles.

a) Draw a regular hexagon, where each side measures 3cm and each internal angle measures 120° .



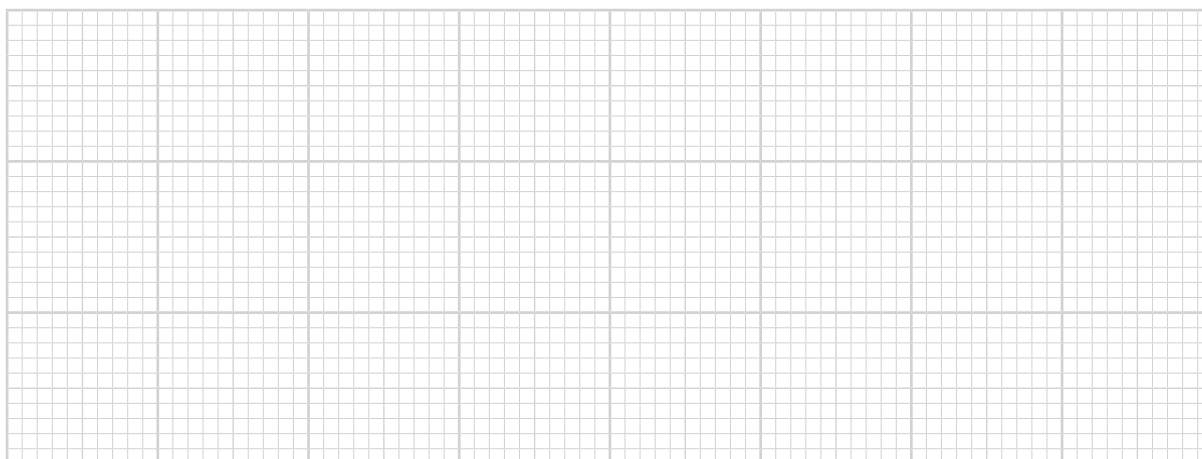
1 mark

b) Draw a rectangle with sides of 5.5cm and 2.5cm.



1 mark

c) Draw an isosceles triangle, where the base of the triangle is 6cm, and the other 2 sides are 5cm.



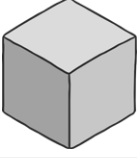
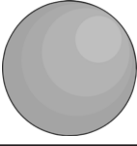
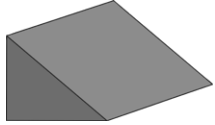
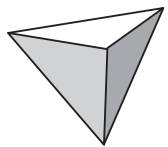
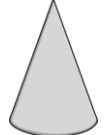
1 mark



Total for this page

2. Recognise, describe and build simple 3D shapes, including making nets.

a) Name these shapes:

b) Describe the properties of these 3D shapes:

	Number of curved faces	Number of flat faces	Number of edges	Number of vertices
Cuboid				
Square based pyramid				
Octagonal prism				
Cylinder				
Hemisphere				

5 marks

5 marks

Total for this page

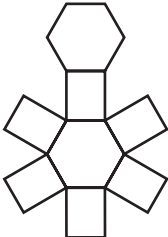
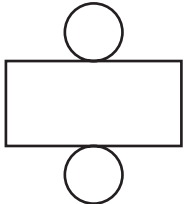
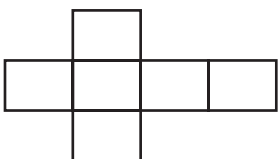
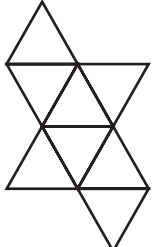
c) Name these shapes:

properties	name of shape
7 flat faces, 15 edges and 10 vertices	
6 square flat faces, 12 edges and 8 vertices	
1 curved face, 0 edges or vertices	



3 marks

d) Below are nets of 3D shapes. Write the name of the shape that can be made using each net:

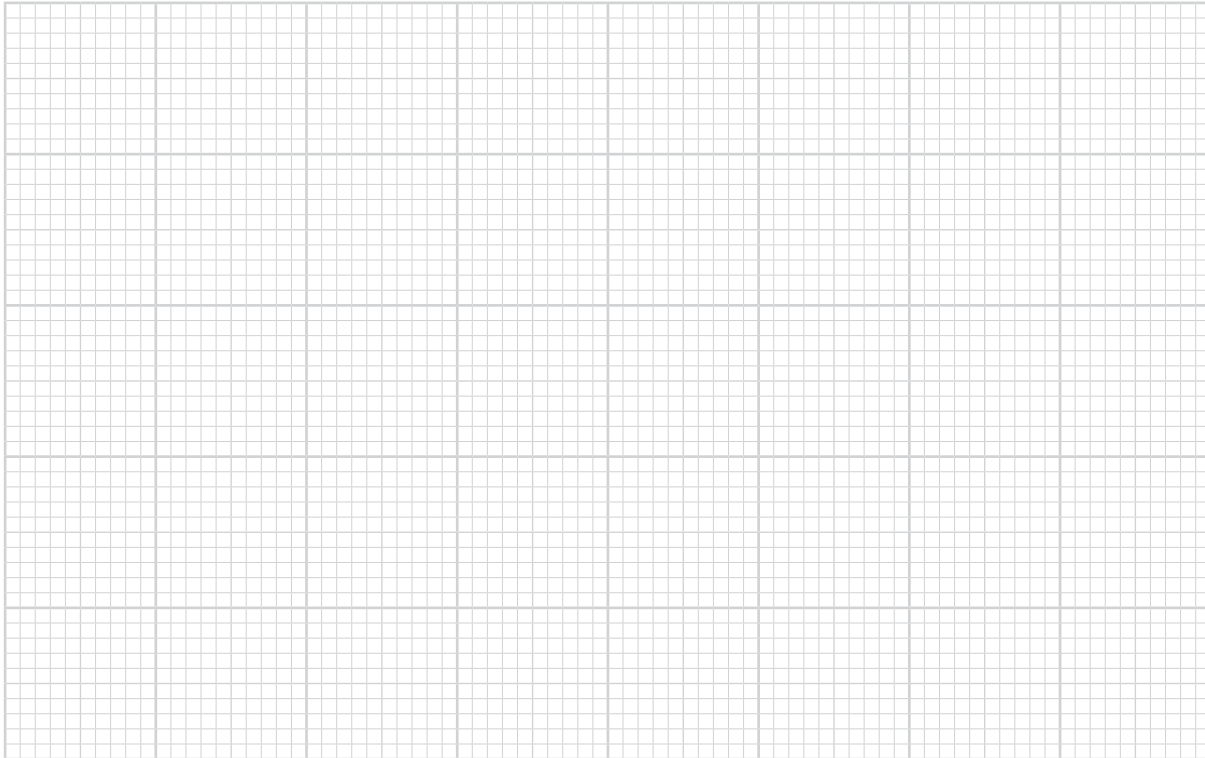


4 marks



Total for this page

e) Draw a net for a square based pyramid:



1 mark

3. Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons.

a) Write the names of these shapes in the correct places in this Venn diagram.

rectangle

isosceles triangle

square

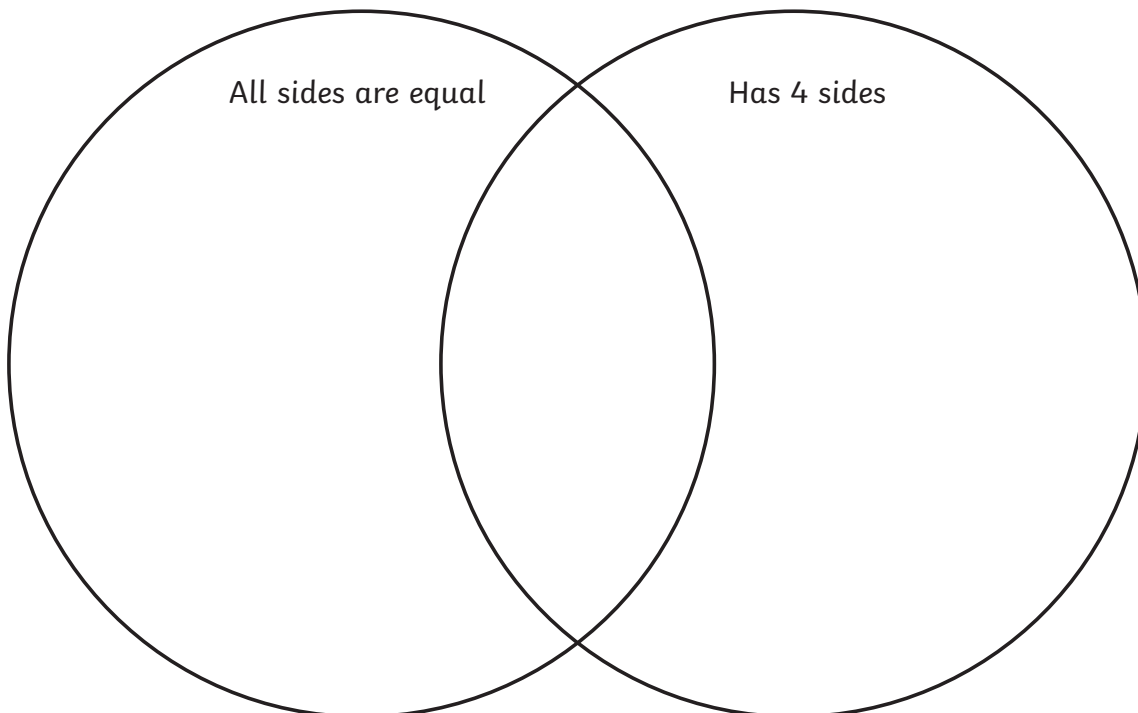
regular pentagon

rhombus

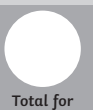
trapezium

irregular hexagon

scalene triangle



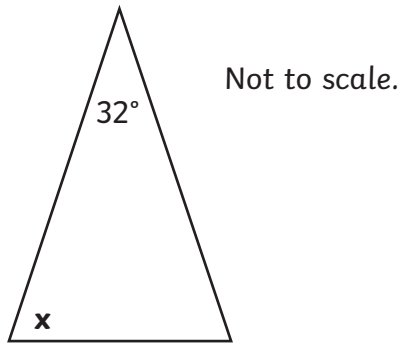
1 mark



Total for this page

b) Calculate the internal angle labelled x in this isosceles triangle.

Show your working out.

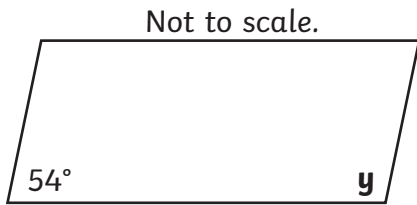


$x = \dots\dots\dots^\circ$

2 marks

c) Calculate the angle marked y in this parallelogram.

Show your working out.

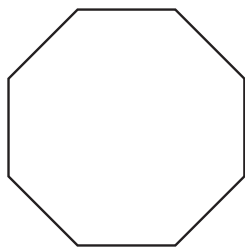


$y = \dots\dots\dots^\circ$

2 marks

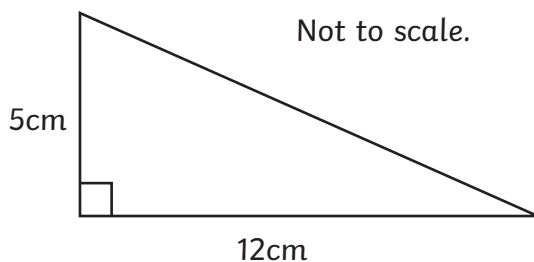
d) Calculate the internal angle of a regular octagon.

Show your working out.



2 marks

e) Draw a rectangle below with the same area as the triangle. The rectangle does not need to be drawn to scale; simply label the length of the sides:



1 mark

Total for this page

4. Illustrate and name parts of circles and know that the relationship between diameter and radius.

a) Complete this table:

Description	Name
The length of the edge around a circle.	
The distance across a circle through the centre.	
The distance from the centre of a circle to any point on the circle.	

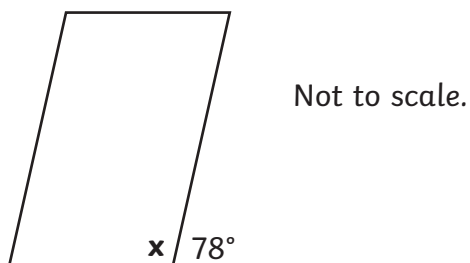
b) Complete this sentence:

The..... is half the.....

5. Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.

a) Calculate the internal angle labelled x in this shape using the information given.

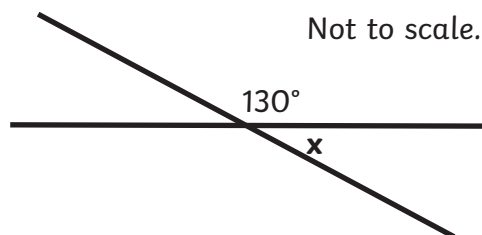
Show your working out.



$x = \dots\dots\dots^\circ$

b) What is the measurement of the angle labelled x ?

Show your working out.



$x = \dots\dots\dots^\circ$



3 marks



1 mark



2 marks



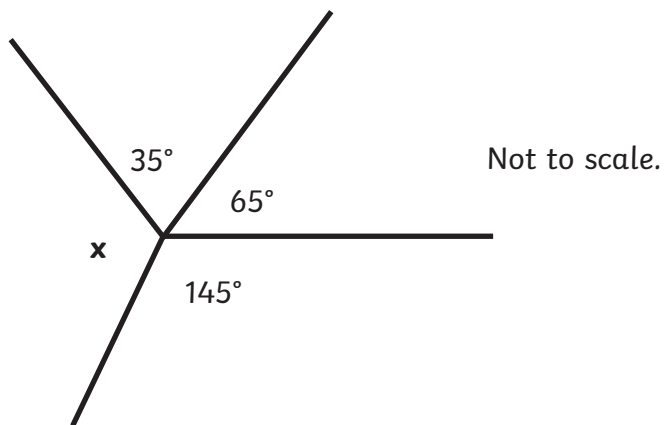
1 mark



Total for this page

c) What is the measurement of the angle labelled x ?

Show your working out.

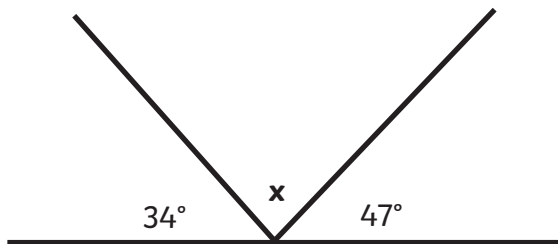


$$x = \dots\dots\dots^\circ$$

2 marks

d) Calculate the missing angle:

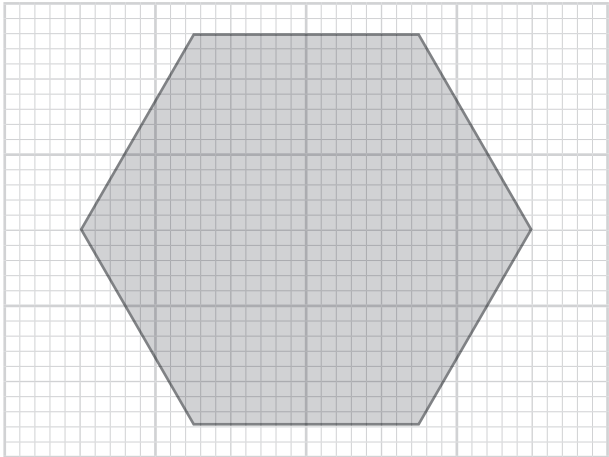
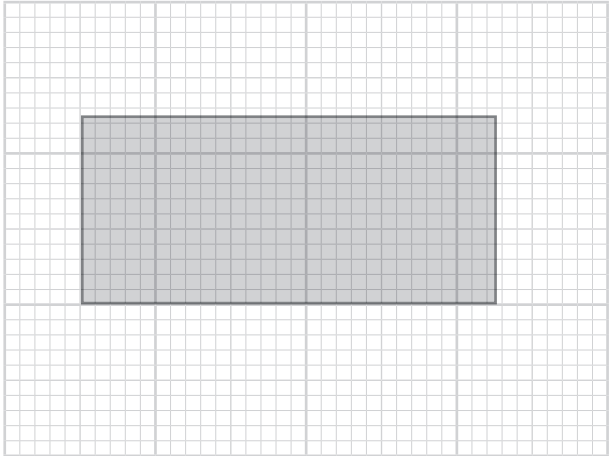
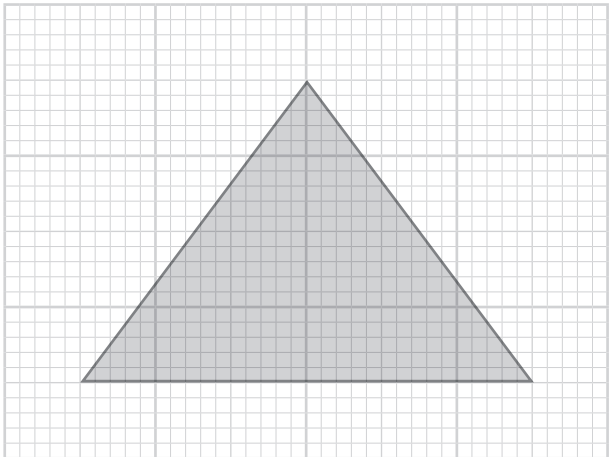
Show your working out.



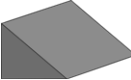




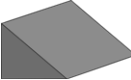




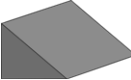




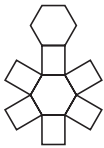
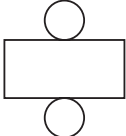
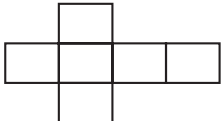
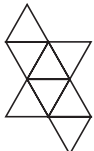
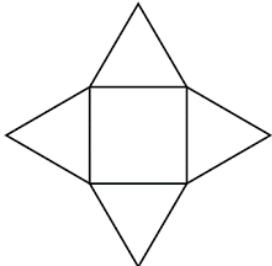
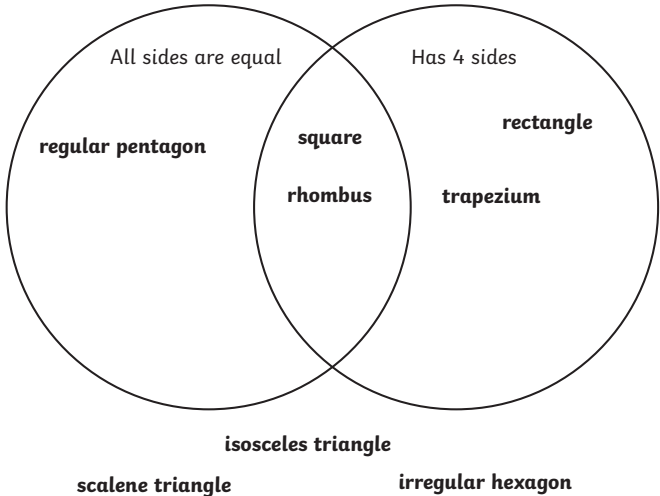
$$x = \dots\dots\dots^\circ$$

2 marks

Total for this page

question	answer	marks	notes
1. Draw 2D shapes using given dimensions and angles.			
a		1	
b		1	
c		1	

question	answer	marks	notes																														
2. Recognise, describe and build simple 3D shapes, including making nets.																																	
a	<table border="1" style="width: 100%; text-align: center;"> <tr> <td data-bbox="268 432 520 555"></td> <td data-bbox="520 432 887 555">cube</td> </tr> <tr> <td data-bbox="268 555 520 678"></td> <td data-bbox="520 555 887 678">sphere</td> </tr> <tr> <td data-bbox="268 678 520 801"></td> <td data-bbox="520 678 887 801">triangular prism</td> </tr> <tr> <td data-bbox="268 801 520 925"></td> <td data-bbox="520 801 887 925">tetrahedron (triangular based prism)</td> </tr> <tr> <td data-bbox="268 925 520 1048"></td> <td data-bbox="520 925 887 1048">cone</td> </tr> </table>		cube		sphere		triangular prism		tetrahedron (triangular based prism)		cone	5	1 mark for each correct shape name. Accept incorrect spellings, where the intention is clear.																				
	cube																																
	sphere																																
	triangular prism																																
	tetrahedron (triangular based prism)																																
	cone																																
b	<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th data-bbox="268 1081 440 1189"></th> <th data-bbox="440 1081 595 1189">Number of curved faces</th> <th data-bbox="595 1081 751 1189">Number of flat faces</th> <th data-bbox="751 1081 914 1189">Number of edges</th> <th data-bbox="914 1081 1078 1189">Number of vertices</th> </tr> </thead> <tbody> <tr> <td data-bbox="268 1189 440 1272">Cuboid</td> <td data-bbox="440 1189 595 1272">0</td> <td data-bbox="595 1189 751 1272">6</td> <td data-bbox="751 1189 914 1272">12</td> <td data-bbox="914 1189 1078 1272">8</td> </tr> <tr> <td data-bbox="268 1272 440 1355">Square based pyramid</td> <td data-bbox="440 1272 595 1355">0</td> <td data-bbox="595 1272 751 1355">5</td> <td data-bbox="751 1272 914 1355">8</td> <td data-bbox="914 1272 1078 1355">5</td> </tr> <tr> <td data-bbox="268 1355 440 1438">Octagonal prism</td> <td data-bbox="440 1355 595 1438">0</td> <td data-bbox="595 1355 751 1438">10</td> <td data-bbox="751 1355 914 1438">24</td> <td data-bbox="914 1355 1078 1438">16</td> </tr> <tr> <td data-bbox="268 1438 440 1520">Cylinder</td> <td data-bbox="440 1438 595 1520">1</td> <td data-bbox="595 1438 751 1520">2</td> <td data-bbox="751 1438 914 1520">2</td> <td data-bbox="914 1438 1078 1520">0</td> </tr> <tr> <td data-bbox="268 1520 440 1603">Hemisphere</td> <td data-bbox="440 1520 595 1603">1</td> <td data-bbox="595 1520 751 1603">1</td> <td data-bbox="751 1520 914 1603">1</td> <td data-bbox="914 1520 1078 1603">0</td> </tr> </tbody> </table>		Number of curved faces	Number of flat faces	Number of edges	Number of vertices	Cuboid	0	6	12	8	Square based pyramid	0	5	8	5	Octagonal prism	0	10	24	16	Cylinder	1	2	2	0	Hemisphere	1	1	1	0	5	1 mark each shape that has all the properties correctly completed.
	Number of curved faces	Number of flat faces	Number of edges	Number of vertices																													
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Square based pyramid	0	5	8	5																													
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c	<table border="1" style="width: 100%;"> <thead> <tr> <th data-bbox="268 1626 675 1675">Properties</th> <th data-bbox="675 1626 1078 1675">Name of shape</th> </tr> </thead> <tbody> <tr> <td data-bbox="268 1675 675 1758">7 flat faces, 15 edges and 10 vertices</td> <td data-bbox="675 1675 1078 1758">Pentagonal prism</td> </tr> <tr> <td data-bbox="268 1758 675 1841">6 square flat faces, 12 edges and 8 vertices</td> <td data-bbox="675 1758 1078 1841">Cube</td> </tr> <tr> <td data-bbox="268 1841 675 1910">1 curved face, 0 edges or vertices</td> <td data-bbox="675 1841 1078 1910">Sphere or Ovoid (egg shape)</td> </tr> </tbody> </table>	Properties	Name of shape	7 flat faces, 15 edges and 10 vertices	Pentagonal prism	6 square flat faces, 12 edges and 8 vertices	Cube	1 curved face, 0 edges or vertices	Sphere or Ovoid (egg shape)	3	1 mark for each correct shape name. Accept incorrect spellings, where the intention is clear.																						
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question	answer	marks	notes
d		hexagonal prism	1 mark for each correct shape name. Accept incorrect spellings, where the intention is clear.
		cylinder	
		cuboid	
		octahedron	
e		1	
3. Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons.			
a		1	1 mark for all shapes correctly positioned.
b	74°	2	2 marks for correct answer.
c	126°	2	1 mark for an appropriate calculation, but incorrect answer.
d	135°	2	

question	answer	marks	notes									
e	any rectangle with area 30cm^2	1										
4. Illustrate and name parts of circles and know that the relationship between diameter and radius.												
a	<table border="1"> <thead> <tr> <th>Description</th> <th>Name</th> </tr> </thead> <tbody> <tr> <td>The length of the edge around a circle.</td> <td>circumference</td> </tr> <tr> <td>The distance across a circle through the centre.</td> <td>diameter</td> </tr> <tr> <td>The distance from the centre of a circle to any point on the circle.</td> <td>radius</td> </tr> </tbody> </table>		Description	Name	The length of the edge around a circle.	circumference	The distance across a circle through the centre.	diameter	The distance from the centre of a circle to any point on the circle.	radius	3	
	Description	Name										
	The length of the edge around a circle.	circumference										
	The distance across a circle through the centre.	diameter										
The distance from the centre of a circle to any point on the circle.	radius											
b	The radius is half the diameter .	1										
5. Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.												
a	102°	2	2 marks for correct answer. 1 mark for an appropriate calculation, but incorrect answer.									
b	50°	1										
c	115°	2	2 marks for correct answer. 1 mark for an appropriate calculation, but incorrect answer.									
d	99°	2										
		Total 40										