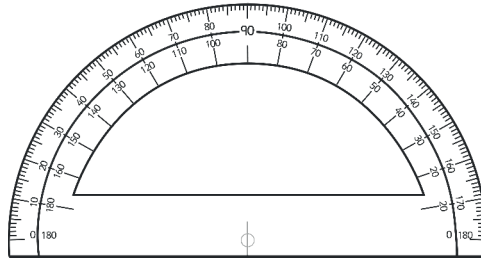


Name:

Maths Assessment Year 6 Term 3: 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.

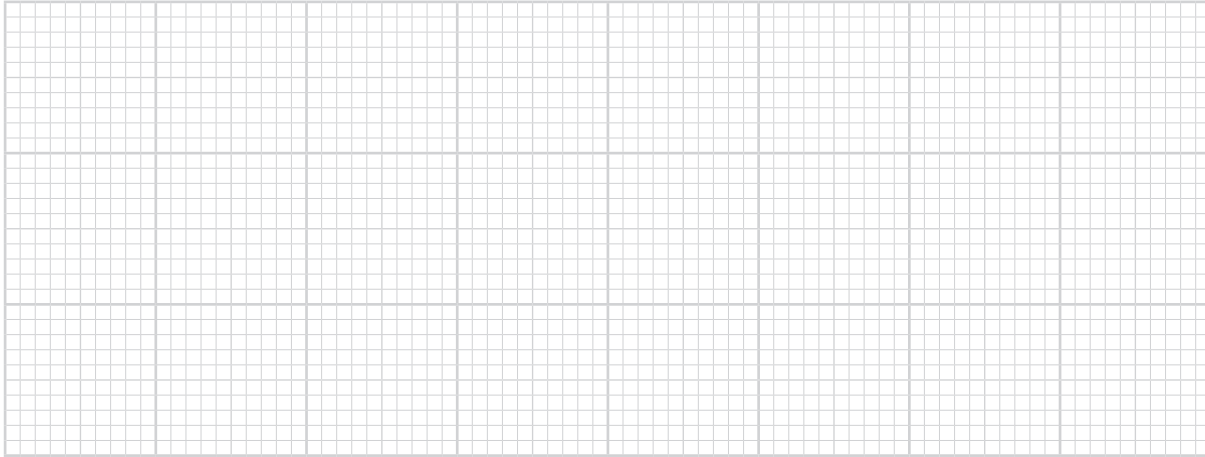
Name:

Date:

Maths Assessment Year 6 Term 3: Geometry - Properties of Shapes

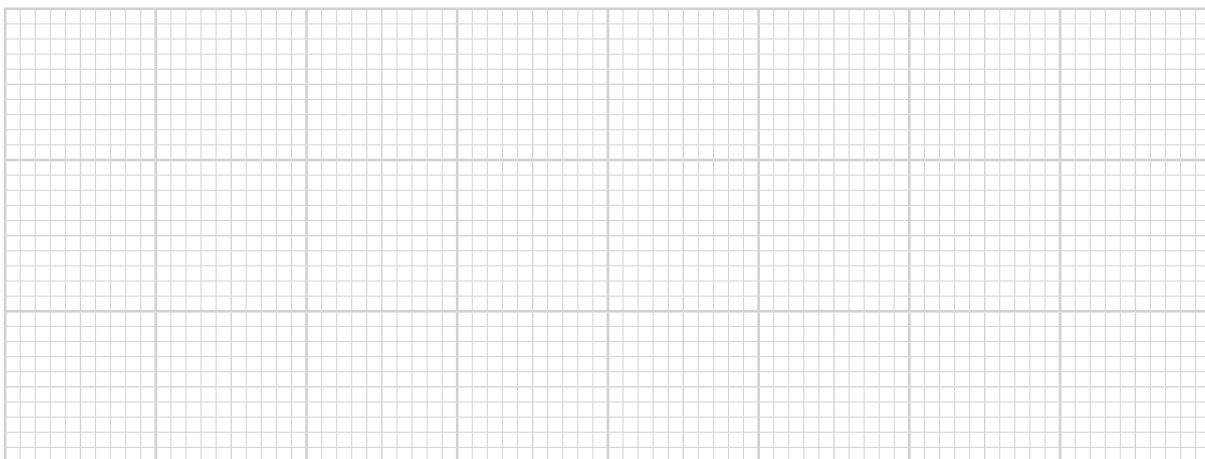
1. Draw 2D shapes using given dimensions and angles.

- a) Draw a regular octagon, where each side measures 2cm and each internal angle measures 135° .



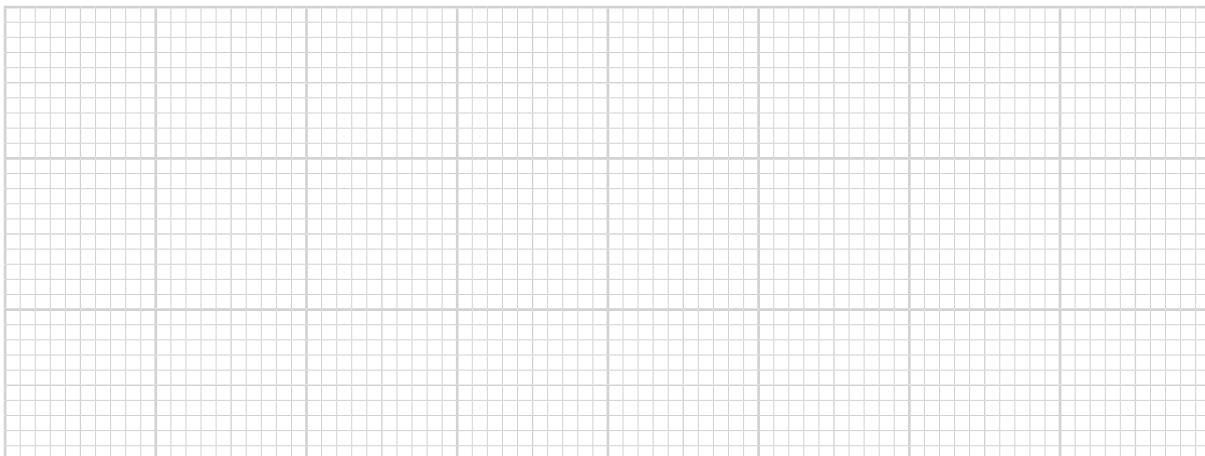
1 mark

- b) Draw a square with sides of 4.25 cm.



1 mark

- c) Draw a parallelogram, where the sides are 7 cm and 4 cm, and the internal angles are 60° and 120° .



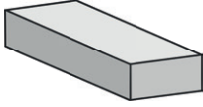
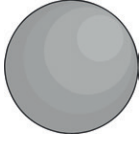
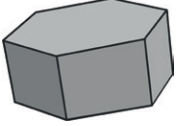
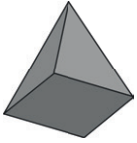
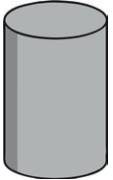
1 mark



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
Cube				
Tetrahedron				
Triangular prism				
Cone				
Octagonal prism				



5 marks



5 marks



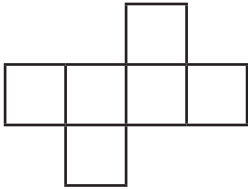

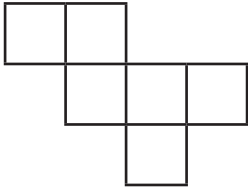
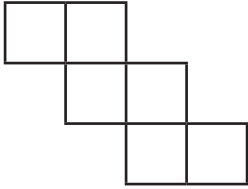
Total for this page

c) Name these shapes:

Properties	name of shape
1 curved face, no flat faces	
8 flat faces, 18 edges, 12 vertices	
5 flat faces, 8 edges, 5 vertices	

3 marks

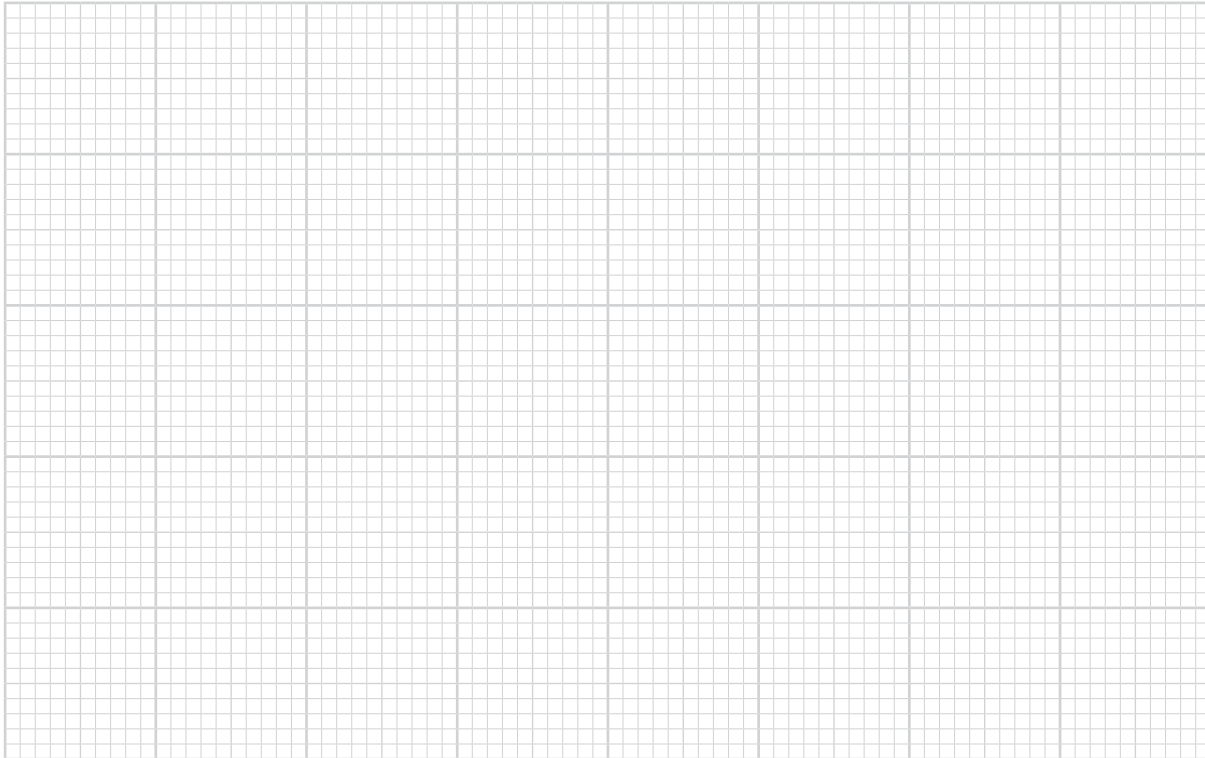
d) Marcus makes some nets to make a cube. Write whether each net will make a cube.

Net	Yes or No
	
	
	
	

4 marks

Total for this page

e) Draw a net for a triangular prism:



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 Carroll Diagram.

Oblong Right-angled triangle Square Regular octagon
 Parallelogram Regular pentagon Equilateral triangle

	All sides are equal	All sides are not equal
Has at least one right-angle		
Has no right-angles		



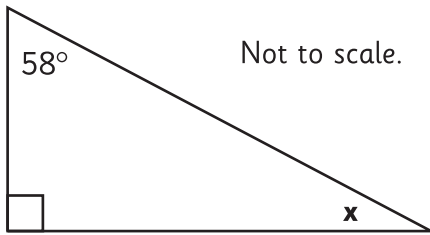
1 mark



Total for this page

b) Calculate the internal angle labelled x in this right-angled triangle.

Show your working out.

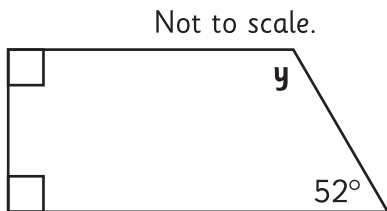


$$x = \dots\dots\dots^\circ$$

2 marks

c) Calculate the angle marked y in this trapezium.

Show your working out.

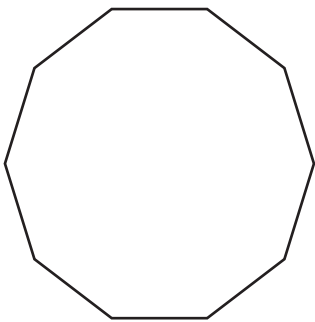


$$y = \dots\dots\dots^\circ$$

2 marks

d) Calculate the internal angles of a regular decagon.

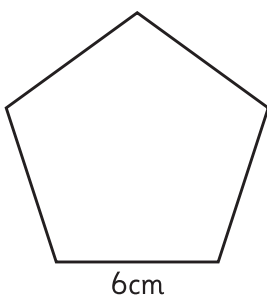
Show your working out.



2 marks

e) Draw a rectangle below, with the same perimeter as the pentagon. The rectangle **does not** need to be drawn to scale; simply label the lengths of the sides.

Not to scale.

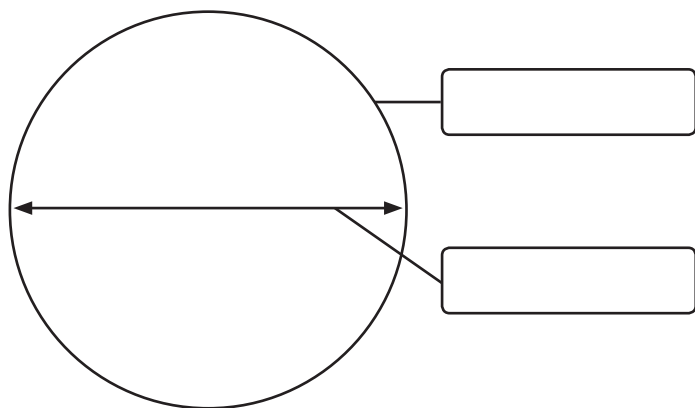


1 mark

Total for this page

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

a) Label the parts of this circle:



1 mark

b) On the circle above, illustrate and label the radius.



1 mark

c) The radius of a circle is 4.7cm. Calculate its diameter.



1 mark

d) The diameter of a circle is 15cm. Calculate its radius.

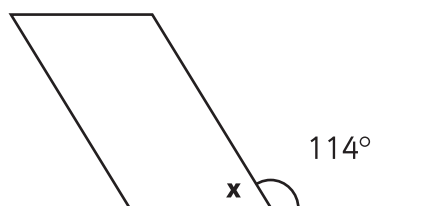


1 mark

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.



Not to scale.

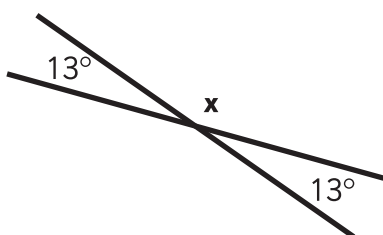
$$x = \dots\dots\dots^\circ$$



2 marks

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

Show your working out.



Not to scale.

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



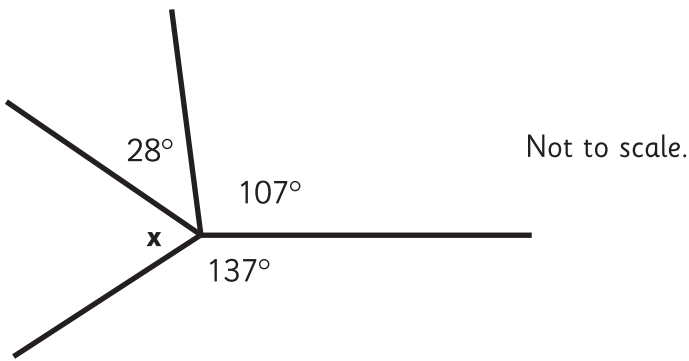
1 mark



Total for this page

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

Show your working out.

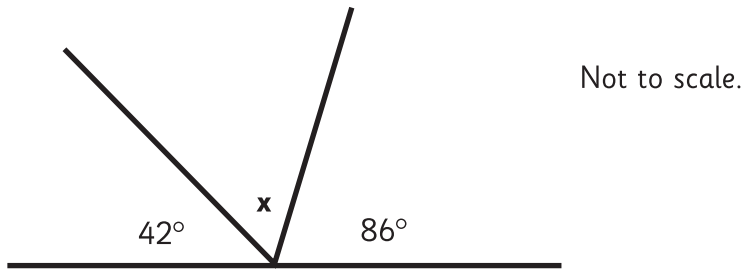


$$x = \dots\dots\dots^\circ$$

2 marks

d) Calculate the missing angle:

Show your working out.



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

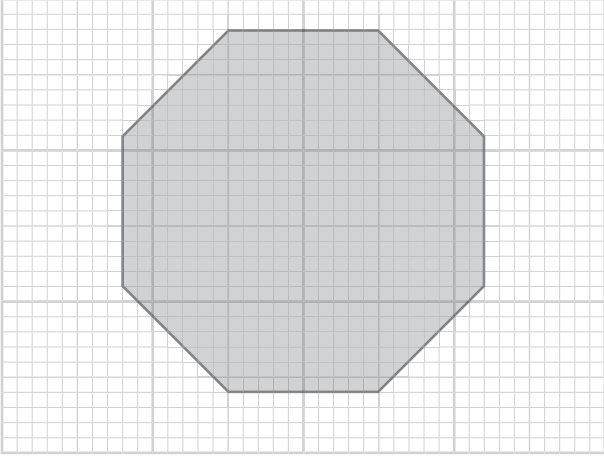
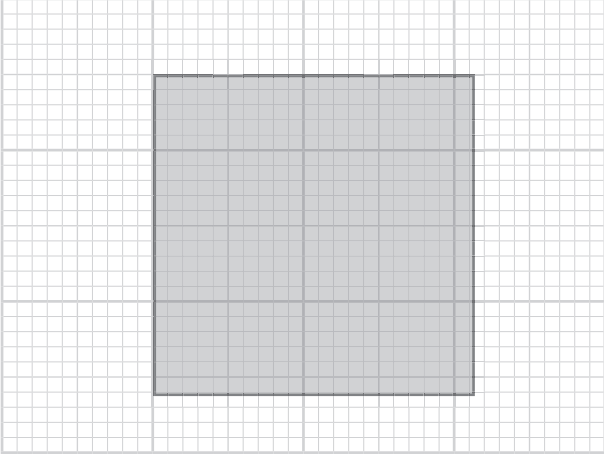
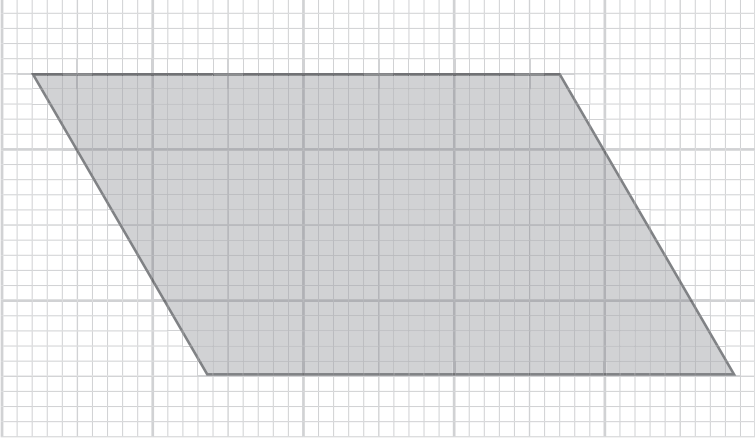
2 marks

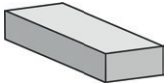

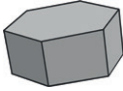


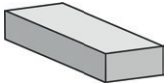

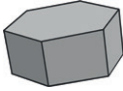


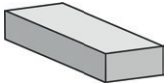

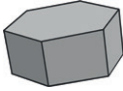


Total for this page

Answer Sheet: Maths Assessment Year 6 Term 3:

Geometry - Properties of Shapes



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%; border-collapse: collapse;"> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">cuboid</td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">sphere</td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">hexagonal prism</td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">square based pyramid</td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">cylinder</td> </tr> </table>		cuboid		sphere		hexagonal prism		square based pyramid		cylinder	5	1 mark for each correct shape name. Accept incorrect spellings, where the intention is clear.																				
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	sphere																																
	hexagonal prism																																
	square based pyramid																																
	cylinder																																
b	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">Number of curved faces</th> <th style="text-align: center;">Number of flat faces</th> <th style="text-align: center;">Number of edges</th> <th style="text-align: center;">Number of vertices</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Cube</td> <td style="text-align: center;">0</td> <td style="text-align: center;">6</td> <td style="text-align: center;">12</td> <td style="text-align: center;">8</td> </tr> <tr> <td style="text-align: center;">Tetrahedron</td> <td style="text-align: center;">0</td> <td style="text-align: center;">4</td> <td style="text-align: center;">6</td> <td style="text-align: center;">4</td> </tr> <tr> <td style="text-align: center;">Triangular prism</td> <td style="text-align: center;">0</td> <td style="text-align: center;">5</td> <td style="text-align: center;">9</td> <td style="text-align: center;">6</td> </tr> <tr> <td style="text-align: center;">Cone</td> <td style="text-align: center;">1</td> <td style="text-align: center;">1</td> <td style="text-align: center;">1</td> <td style="text-align: center;">1*</td> </tr> <tr> <td style="text-align: center;">Octagonal prism</td> <td style="text-align: center;">0</td> <td style="text-align: center;">10</td> <td style="text-align: center;">24</td> <td style="text-align: center;">16</td> </tr> </tbody> </table>		Number of curved faces	Number of flat faces	Number of edges	Number of vertices	Cube	0	6	12	8	Tetrahedron	0	4	6	4	Triangular prism	0	5	9	6	Cone	1	1	1	1*	Octagonal prism	0	10	24	16	5	1 mark each shape that has all the properties correctly completed. *A cone has an apex, so allow the answer 0.
	Number of curved faces	Number of flat faces	Number of edges	Number of vertices																													
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Tetrahedron	0	4	6	4																													
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question	answer	marks	notes
d	All 4 nets will make a cube.	4	1 mark for each correct answer.
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		All sides are equal	All sides are not equal	1	1 mark for all shapes correctly positioned.
	Has at least one right-angle	Square	Oblong Right-angled triangle		
	Has no right-angles	Equilateral triangle Regular octagon Regular pentagon	Parallelogram		
b	32°	2	2 marks for correct answer.		
c	128°	2	1 mark for an appropriate calculation, but incorrect answer.		
d	144°	2			
e	any rectangle with a perimeter of 30cm	1			

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

a		1	
---	--	---	--

question	answer	marks	notes
b	Radius is illustrated and labelled appropriately.	1	
c	9.4cm	1	
d	7.5cm	1	
5. Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.			
a	66°	2	2 marks for correct answer. 1 mark for an appropriate calculation, but incorrect answer.
b	167°	1	
c	88°	2	2 marks for correct answer. 1 mark for an appropriate calculation, but incorrect answer.
d	52°	2	
		Total 40	