Please make sure that you print this resource at 100% so that all measurements are correct.
To do this, follow the relevant steps below.

Adobe Reader or Adobe Acrobat

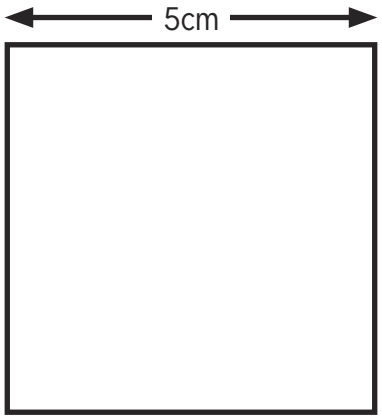
- Adobe Reader is a free PDF viewer, from Adobe. To install a copy of Adobe Reader, go to https://get.adobe.com/uk/reader/.
- Once Adobe Reader is installed, open your PDF.
- Go to File>Print.
- Under 'Page Sizing & Handling', select 'Size'.
- From here, make sure that 'Actual Size' is selected.
- Print this page as a test, making sure that the shape below is the correct size once printed.
- If the test print is correct, print your PDF.

Foxit Reader

- Go to File>Print.
- Set the 'Scaling' to 'None'.
- Print this page as a test, making sure that the shape below is the correct size once printed.
- If the test print is correct, print your PDF.

Web Browser

- If printing from a web browser, such as Chrome, Firefox or Microsoft Edge make sure that your printer is set to print at 100%, either by unticking 'Fit to Page' or selecting 'Actual Size'.
- Print this page as a test, making sure that the shape below is the correct size once printed.
- If the test print is correct, print your PDF.



Name:

Maths Assessment Year 6 Term 3: Measurement

For question 3a, children will need to know the conversion rate between miles and kilometres.

You will need a ruler for this assessment.

1. Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.
2. Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places.
3. Convert between miles and kilometres.
4. Recognise that shapes with the same areas can have different perimeters and vice versa.
5. Recognise when it is possible to use formulae for area and volume of shapes.
6. Calculate the area of parallelograms and triangles.
7. Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [for example, mm^3 and km^3].

Name: Date:

60 total marks

Maths Assessment Year 6 Term 3: Measurement

1. Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.

a) A 2 pint carton of milk is 1.136 litres. How many litres is 7 pints of milk?

l

1 mark

b) A tin of tuna weighs 160g. The tins are sold in packs of 4.

How much would 3 packs weigh? Write your answer in kilograms.

kg

1 mark

c) Madison swims 15 lengths of a 25 metre swimming pool each day. In a seven day week, how far will Madison swim? Give your answer in kilometres.

km

1 mark

Total for this page

d) A one pence coin weighs 3.56g and a two pence coin 7.12g. Selma has a jar of coins. She knows that an empty jar weighs 210g. What will be the weight of a jar containing £3 worth of 1p and 2p coins? Give your answer in kilograms.

kg

2 marks

2. Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places.

a) Match up the equivalent units of length:

76 cm	7600m
7.6 cm	0.076cm
7.6 km	760mm
0.76 mm	0.76km
760 m	0.076m

5 marks

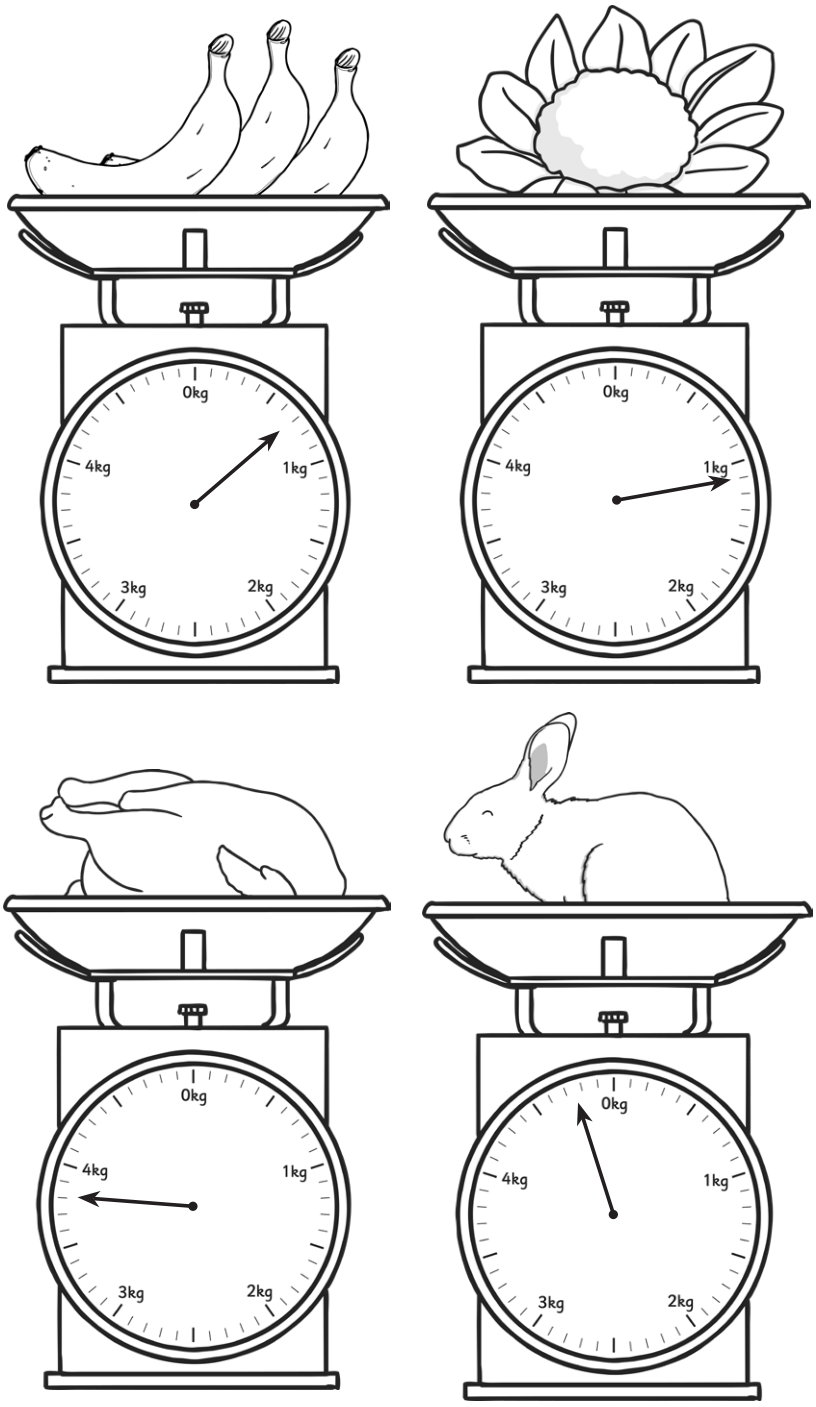
b) Complete the following table to identify the equivalent lengths:

Millimetres	Centimetres	Metres
		0.075 m
5.8 mm		
	40 cm	

6 marks

Total for this page

c) Write the mass shown on these scales, using both kilograms and grams:



	Mass in grams (for example 500g)	**Mass in kilograms** (for example 0.5 kg)
Bananas		
Cauliflower		
Chicken		
Rabbit		

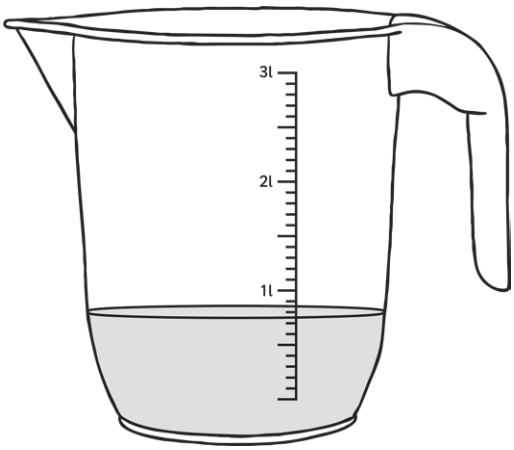
4 marks

Total for this page

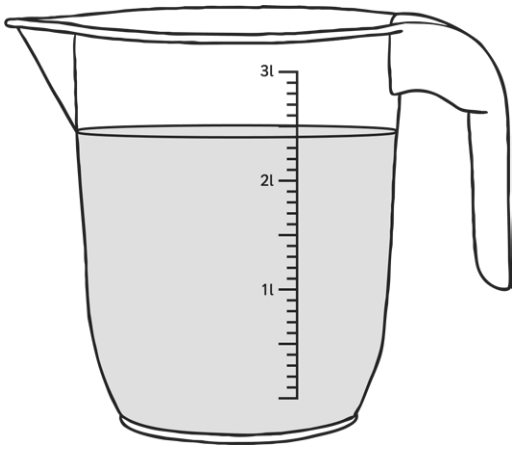
d) Write the volume of water in each jug, in both millilitres and litres:

i.

ii.



iii.



	Millilitres (for example 1000ml)	**Litres** (for example 1l)
i.		
ii.		
iii.		

3 marks

e)

How many minutes are in two and a quarter hours?	
How many minutes is 210 seconds?	
300 minutes is equivalent to how many hours?	
How many minutes is equivalent to three quarters of an hour?	
How many seconds are in 7 minutes?	

5 marks

Total for this page

3. Convert between miles and kilometres.

a) Identify the equivalent distances in miles and kilometres, rounded to the nearest whole number, by completing the table below:

Distance in miles	Distance in kilometres
2 miles	
5 miles	
	32 km
40 miles	
	160 km

5 marks

b) This map shows the location of some cities in the world.

Complete the following table.

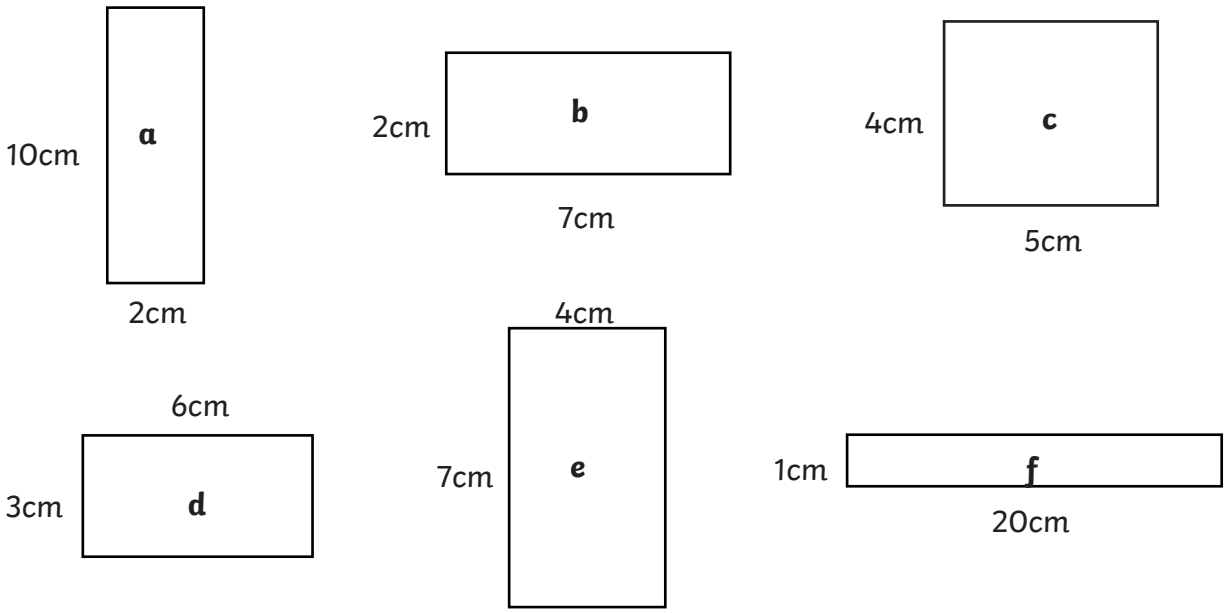
Journey	Journey in miles	Journey in kilometres
London to Moscow		2400 km
Delhi to Johannesburg		8000 km
Los Angeles to Rio de Janeiro	6300 miles	

3 marks

Total for this page

4. Recognise that shapes with the same areas can have different perimeters and vice

a) Look at these shapes. The shapes are **not** drawn to scale.



(These shapes are **not** to scale.)

Which **three** shapes have the same area? ....

Which **three** shapes have the same perimeter? ....

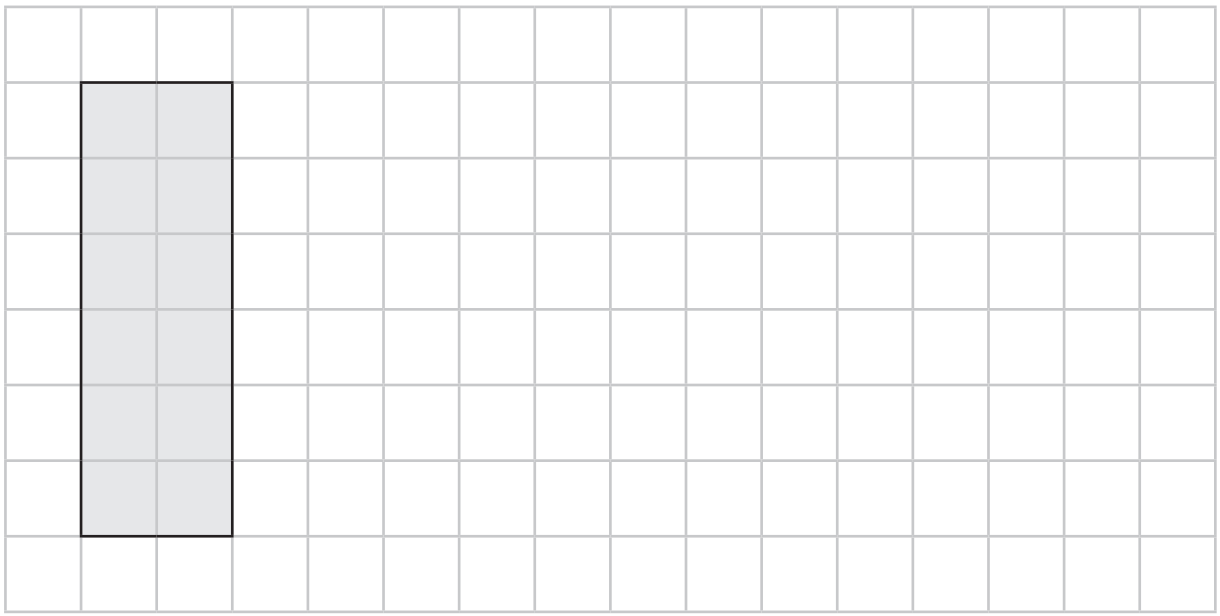
2 marks

b) Draw a square with the same area as the rectangle in this grid.

1 mark

Total for this page

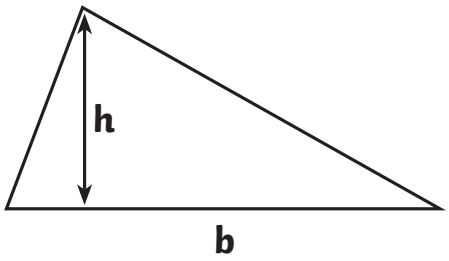
c) Draw a different rectangle with the same perimeter as the one drawn in this grid.



1 mark

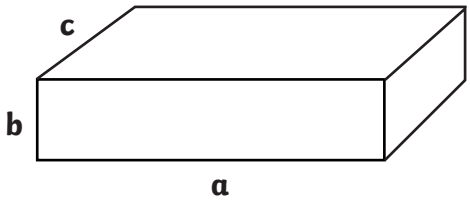
versa.

a) Write a formula you could use to calculate the area of this triangle.



2 marks

b) Here is a cuboid:



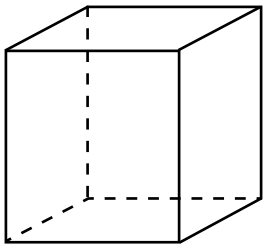
Match the formula to the measurement.

Volume	abc
Surface area	2(ab + ac + bc)

1 mark

Total for this page

c) Here is a cube.



The volume of the cube is 27 cm^3 and the surface area is 54 cm^2.

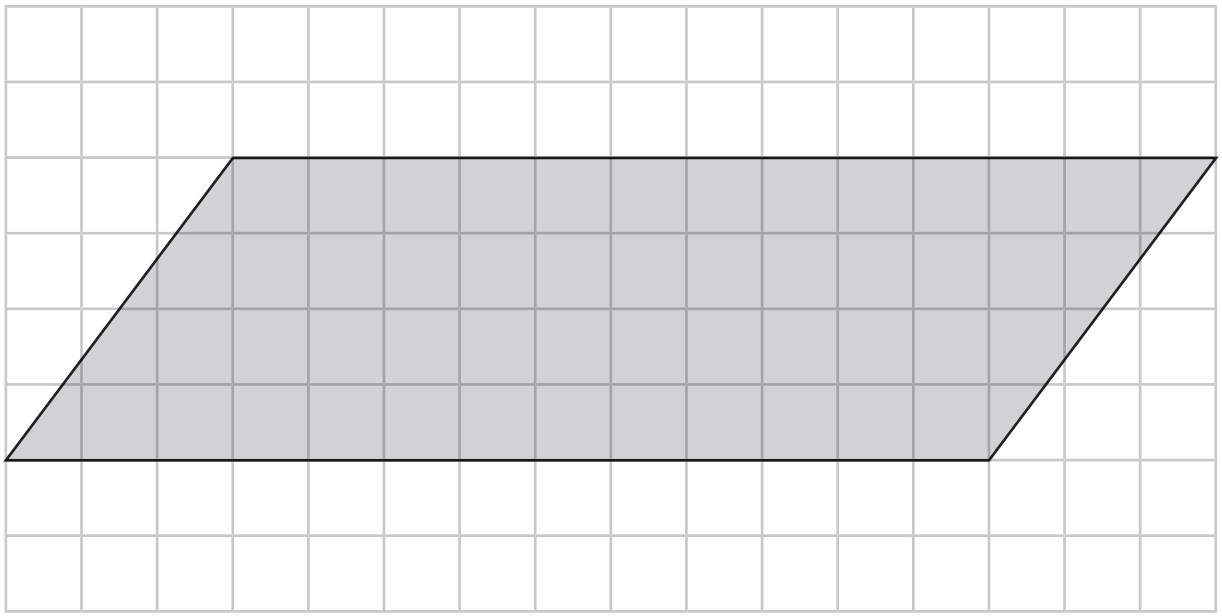
Calculate the length of each edge of the cube.

cm

1 mark

5. Recognise when it is possible to use formulae for area and volume of shapes.

a) Calculate the area of this parallelogram.



cm^2

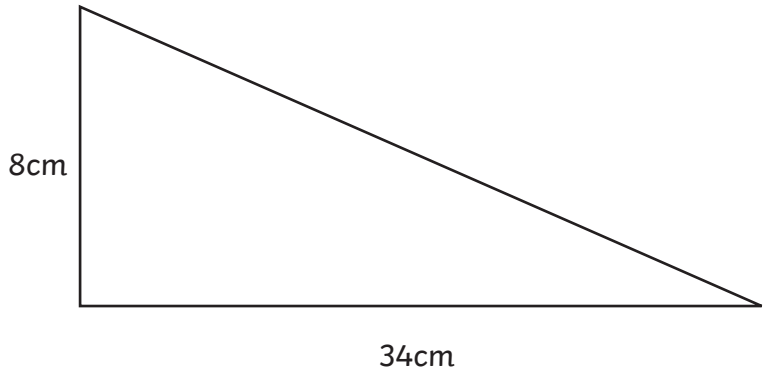
1 mark

Total for this page

b) Draw a parallelogram on this grid with an area of 55cm^2.

2 marks

c) Calculate the area of this triangle. The triangle is **not** drawn to scale.

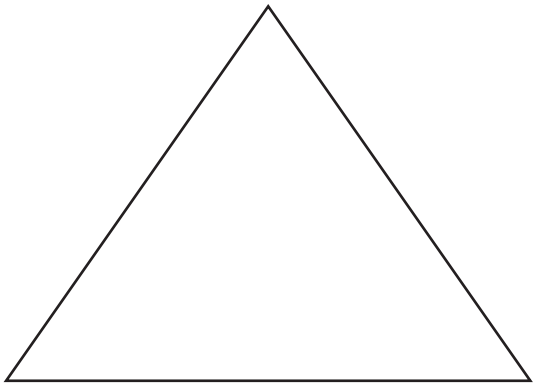


cm^2

2 marks

d) Calculate the area of this triangle:

This shape is to scale. You can use a ruler for this question.



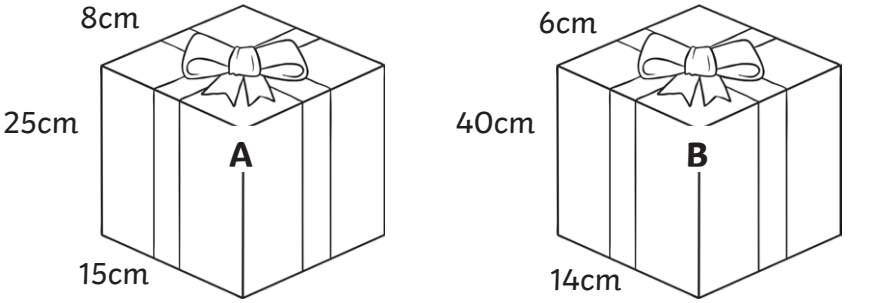
cm^2

2 marks

Total for this page

6. Calculate the area of parallelograms and triangles.
7. Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [for example, mm^3 and km^3].

a) Here are two gift boxes. Shola wants to work out which box has the greater



not drawn to scale

Which gift box has the greater volume?

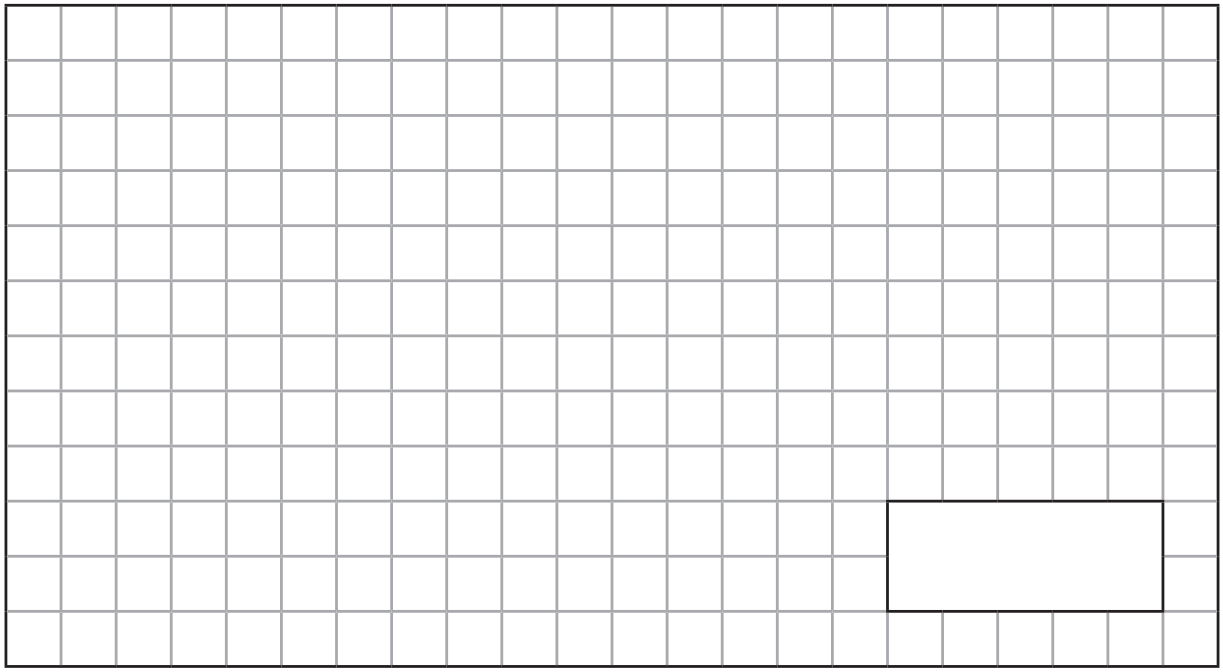
2 marks

Total for this page

volume.

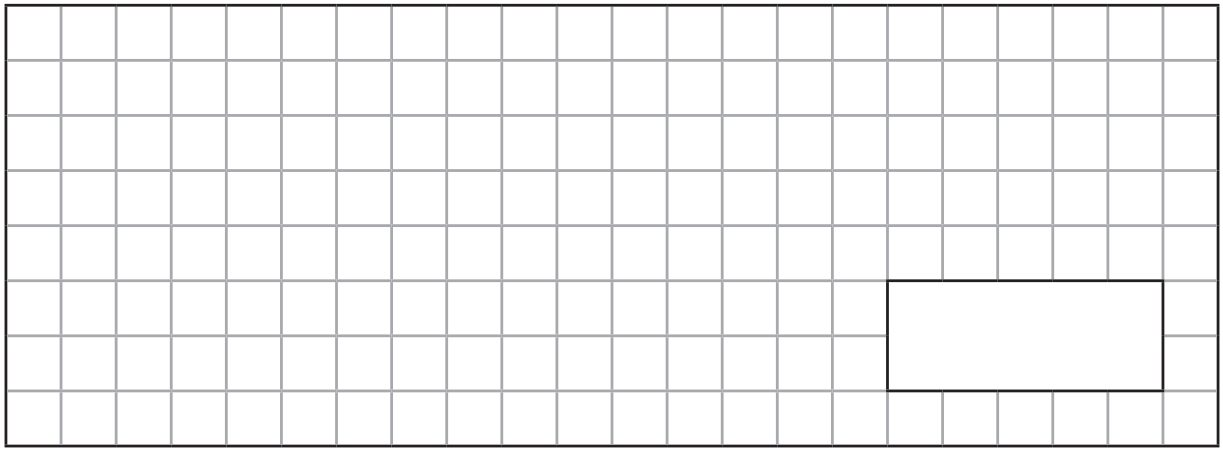
b) A clothing business wants to build a new warehouse. The area of land is 80m long and 60m wide. The maximum height is 35m. There must be a distance of 5m between the edge of the building and the edge of the land, all the way around the building.

What is the maximum volume of the warehouse?



3 marks

What is the length of one side of the cube?



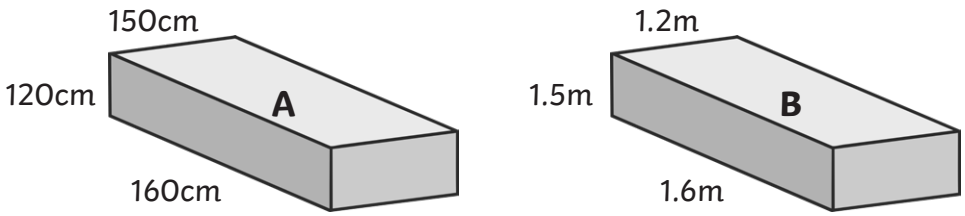
1 mark

2 marks

Total for this page

c) A cube has a volume of 125 mm^3.

not drawn to scale



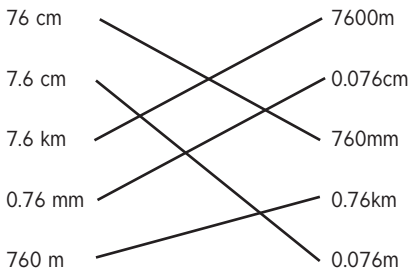
Use one of the signs <, >, or = to compare the volume of the 2 cuboids.

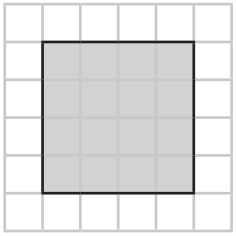
Volume of A		Volume of B

1 mark

Total for this page

Answer Sheet: Maths Assessment Year 6 Term 3:
Measurement

<table>
<tr><th>question</th><th>answer</th><th>marks</th><th>notes</th></tr>
<tr><td colspan="4">1. Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.</td></tr>
<tr><td>a</td><td>3.976 litres</td><td>1</td><td></td></tr>
<tr><td>b</td><td>1.92kg</td><td>1</td><td></td></tr>
<tr><td>c</td><td>2.625 km</td><td>1</td><td></td></tr>
<tr><td>d</td><td>1.278kg</td><td>2</td><td>2 marks for the correct answer. 1 mark for an incorrect answer with only 1 mistake in calculating.</td></tr>
<tr><td colspan="4">2. Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places.</td></tr>
<tr><td>a</td><td> 
</td><td>5</td><td>1 mark for each correct answer.</td></tr>
<tr><td>b</td><td>
<table>
<tr><td>Millimetres</td><td>Centimetres</td><td>Metres</td></tr>
<tr><td>75 mm</td><td>7.5 cm</td><td>0.075 m</td></tr>
<tr><td>5.8 mm</td><td>0.58 cm</td><td>0.0058 m</td></tr>
<tr><td>400 mm</td><td>40 cm</td><td>0.4 m</td></tr>
</table>
</td><td>6</td><td>Award one mark for each box correctly completed.</td></tr>
<tr><td>c</td><td>
<table>
<tr><td></td><td>Mass in grams</td><td>Mass in kilograms</td></tr>
<tr><td>Bananas</td><td>700 g</td><td>0.7 kg</td></tr>
<tr><td>Cauliflower</td><td>3800 g</td><td>3.8 kg</td></tr>
<tr><td>Chicken</td><td>4750 g</td><td>4.75 kg</td></tr>
<tr><td>Rabbit</td><td>1100 g</td><td>1.1 kg</td></tr>
</table>
</td><td>4</td><td rowspan="2"></td></tr>
<tr><td>d</td><td>
<table>
<tr><td></td><td>Millilitres</td><td>Litres</td></tr>
<tr><td>i</td><td>1900 ml</td><td>1.9 l</td></tr>
<tr><td>ii</td><td>750 ml</td><td>0.75 l</td></tr>
<tr><td>iii</td><td>2400 ml</td><td>2.4 l</td></tr>
</table>
</td><td>3</td></tr>
</table>

<table>
<tr><th>question</th><th>answer</th><th>marks</th><th>notes</th></tr>
<tr><td>e</td><td>
<table>
<tr><td>How many minutes are in two and a quarter hours?</td><td>135 minutes</td></tr>
<tr><td>How many minutes is 210 seconds?</td><td>3 ½ or 3.5 minutes</td></tr>
<tr><td>300 minutes is equivalent to how many hours?</td><td>5 hours</td></tr>
<tr><td>How many minutes is equivalent to three quarters of an hour?</td><td>45 minutes</td></tr>
<tr><td>How many seconds are in 7 minutes?</td><td>420 seconds</td></tr>
</table>
</td><td>5</td><td></td></tr>
<tr><td colspan="4">3. Convert between miles and kilometres.</td></tr>
<tr><td>a</td><td>
<table>
<tr><td>Distance in miles</td><td>Distance in kilometres</td></tr>
<tr><td>2 miles</td><td>3km</td></tr>
<tr><td>5 miles</td><td>8 km</td></tr>
<tr><td>20 miles</td><td>32 km</td></tr>
<tr><td>40 miles</td><td>64 km</td></tr>
<tr><td>100 miles</td><td>160 km</td></tr>
</table>
</td><td>5</td><td></td></tr>
<tr><td>b</td><td>
<table>
<tr><td>Journey</td><td>Journey in miles</td><td>Journey in kilometres</td></tr>
<tr><td>London to Moscow</td><td>1500 miles</td><td>2400 km</td></tr>
<tr><td>Delhi to Johannesburg</td><td>5000 miles</td><td>8000 km</td></tr>
<tr><td>Los Angeles to Rio de Janeiro</td><td>6300 miles</td><td>10 080 km</td></tr>
</table>
</td><td>3</td><td></td></tr>
<tr><td colspan="4">4. Recognise that shapes with the same areas can have different perimeters and vice versa.</td></tr>
<tr><td>a</td><td>same area: a, c, f
same perimeter: b, c, d</td><td>2</td><td></td></tr>
<tr><td>b</td><td>  </td><td>1</td><td></td></tr>
<tr><td>c</td><td>Any rectangle with a perimeter of 16cm, e.g. 1 cm x 7cm</td><td>1</td><td>A 4cm x 4cm square is correct. Also allow 6cm x 2cm in a different orientation to the one given.</td></tr>
</table>

question	answer	marks	notes
5. Recognise when it is possible to use formulae for area and volume of shapes.			
a	½ x bh or $\frac{bh}{2}$	2	
b	Volume ——— abc Surface area ——— 2(ab + ac + bc)	1	
c	3cm	1	
6. Calculate the area of parallelograms and triangles.			
a	52cm^2	1	
b	any parallelogram with area 55cm^2 e.g. base 11cm, height 5cm or base 22cm, height 2.5cm	2	
c	136 cm^2	2	
d	17.5 cm^2	2	
7. Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [for example, mm^3 and km^3].			
a	A = 3000 cm^3 , B = 3360 cm^3 **B has the greater volume**	2	
b	122 500 m^3	3	3 marks for a correct answer. 2 marks for correctly multiplying 80 x 60 x 35 = 168 000 m3. 1 mark for an incorrect answer, but a calculation of 70 x 50 x 35 was attempted.
c	5 mm	1	
d	1000 mm^3	2	2 marks for a correct answer, 1 mark for attempting to calculate the volume of 1 cm^3 in mm^3.
e	Volume of A = Volume of B	1	Note the volumes do not have to be calculated to find the answer.
		Total 60	