fs4u

Maths Level 1

Test your skills

Sections 4 and 5

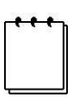
Planning a new kitchen

applying skills in:

- measures
- shape and space

Answer all questions in this task.

Write your answers in the spaces provided.



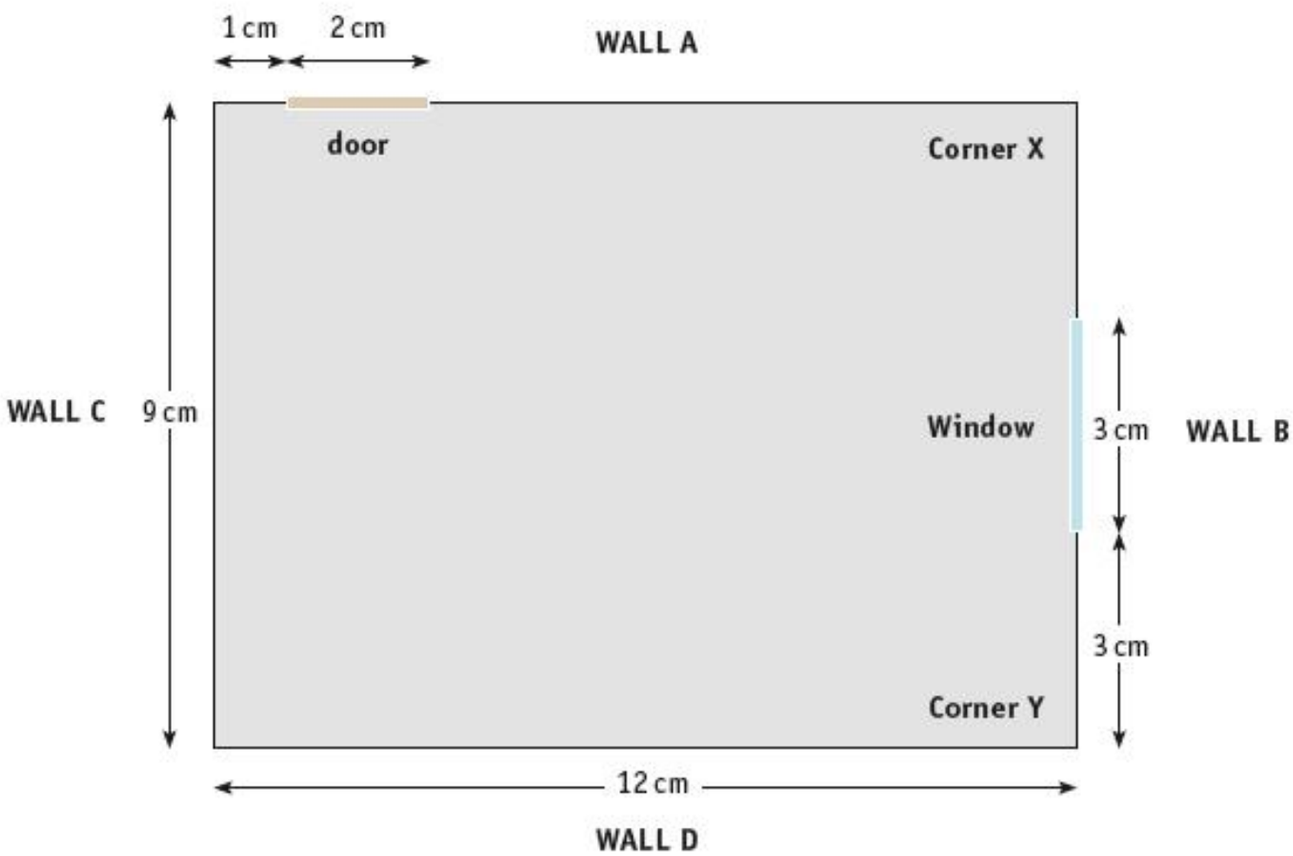
Where you see this sign you must show clearly how you get your answers as marks may be awarded for your working out.

You may use a calculator.

Fitting a kitchen

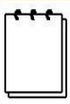
The kitchen below is to be redesigned.

This is a scaled diagram of the kitchen floor (not drawn to scale).



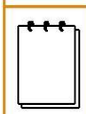
Scale: 2 cm represents 1 m

1	Use the information on the diagram to answer the questions.
a)	What is the real length of the kitchen?



1 Use the information on the diagram to answer the questions.

a) What is the real length of the kitchen?



Real length ____ metres

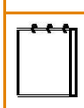
b) What is the real width of the kitchen?

Real width ____ metres

2	Kitchen units are to be positioned along wall **A** between the door and the corner marked **X** in the diagram.
	How many centimetres is this length on the diagram?

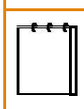
Length ____ centimetres

3	The real length **B** is **4.5 m**.
	What is 4.5 metres in centimetres?



4.5 metres is ____ centimetres

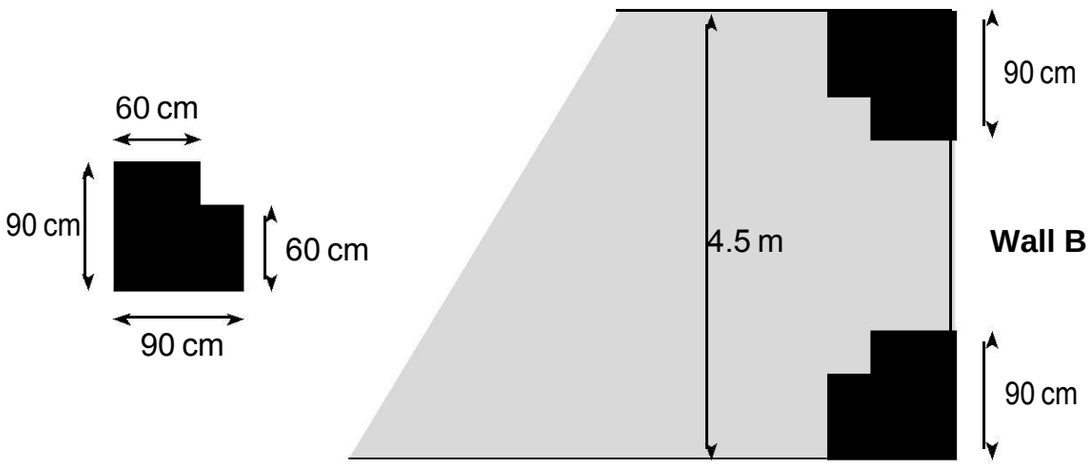
4	A corner ‘base unit’ is going to be fitted in the corners of wall **B**, marked **X** and **Y** in the diagram.
	How many degrees is angle **X**?



Angle **X** ____ °

5 The diagram shows a plan view of a corner base unit. The dimensions shown are the **real** values.

This sketch shows their position in the kitchen.



How much real wall space is left along wall **B** for other base units?

Wall space left ____ centimetres

Base units come in different sizes.

Base Kitchen Units

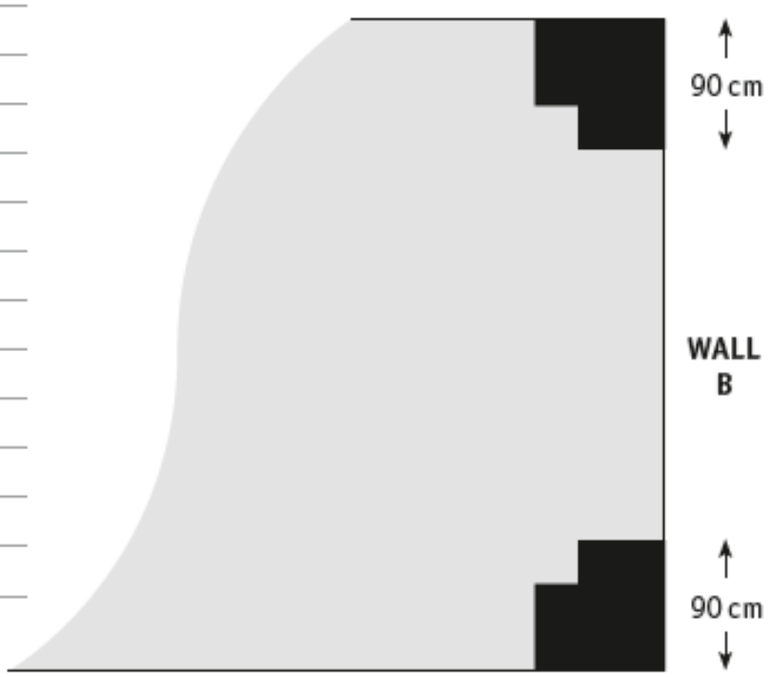
		Sizes
60 cm by 30 cm	front	
60 cm by 60 cm	front	
60 cm by 90 cm	front	

6 You need to slot in base units to fill the remaining space in between the corners units along wall **B**.

Use your answer to *question 5*. Choose units from the choices above to fill this space.

What is the smallest number of units that fill the space exactly?

You can use the diagram below to sketch in the base units to help you.



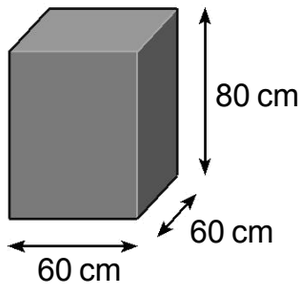
Smallest number of units

7 The table shows the cost of the kitchen base units.

Corner units	£124.99
60 cm by 30 cm unit	£76.49
60 cm by 60 cm unit	£85.99
60 cm by 90 cm unit	£96.99

What is the total cost of the 2 corner units and the other units you have chosen for wall **B**?

Total cost £



All kitchen base units are 80 cm high.

What is the volume of this kitchen unit?

Volume | cubic centimetres

9

This is one of the kitchen units.

This kitchen unit does not have any symmetry. Explain why not.

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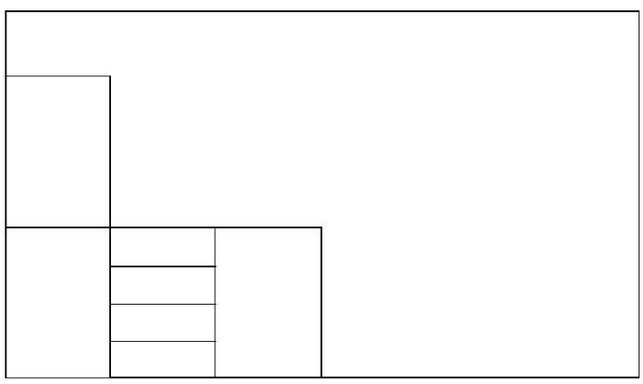
10	The diagram shows part of the proposed plan for kitchen units along wall **D**.
	Complete the drawing of the following kitchen plan so that the design is symmetrical.
	 Wall **D**

Solutions

		answer
1a)	From the diagram the length of the kitchen is 12 cm. The scale states that every 2 cm represents 1 m. 12 ÷ 2 = 6	**6 metres**
1b)	From the diagram the length of the kitchen is 9 cm. 9 ÷ 2 = 4.5	**4.5 metres**
2	Wall **a** is 12 cm long on the diagram. 12 – 1 – 2 = 9	**9 centimetres**
3	4.5 · 100 = 450	**450 centimetres**
4	Angle **X** is a right angle	**90°**
5	Need to work in centimetres Wall length **a** is 450 cm 450 – 90 – 90 = 270	**270 centimetres**
6	The space is 270 cm. The smallest number of units to fi t the space = 90 cm + 90 cm + 90 cm = 270 cm	**three 90 cm units**
7	Corner units: £124.99 + £124.99 = £249.98 £96.99 · 3 = £290.97 £249.98 + £290.97 = £540.95	**£540.95**
8	80 · 60 · 60	**288 000 cubic centimetres**
9	There is a tap and sink on the left-hand side but not on the right.	
10