

Non-calculator Questions

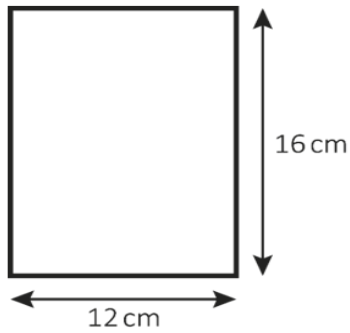
NCFE

1.

Zak wants to include a map in his article.
The map must be to scale.

The map shows a part of the country that is 30 km wide and 48 km long.

It must fit into a space that is no more than 12 cm wide and 16 cm long.



**Not drawn
accurately**

The map is scaled down to fit into the space.

In the article, what distance, in km, will 1 cm on the map represent?

[3 marks]

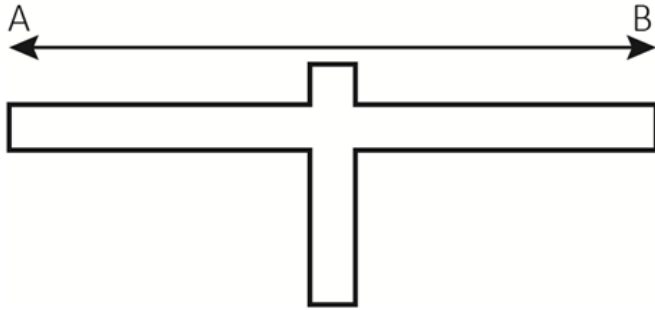
Blank area for the student's answer.

Your answer:

km

2.

A statue is 20 m high, and 54 m wide (from A to B).



Not drawn
accurately

Noah is making a scale model of this statue.

Noah's model statue is 5 cm high.

How wide is Noah's model statue?

[2 marks]

Blank area for writing the answer.

Your answer:

cm

City & Guilds

3.

The distance between two villages on a map measures 6 centimetres.

The map has a scale 1:25 000

What is the actual distance between the two villages in **kilometres**?

km

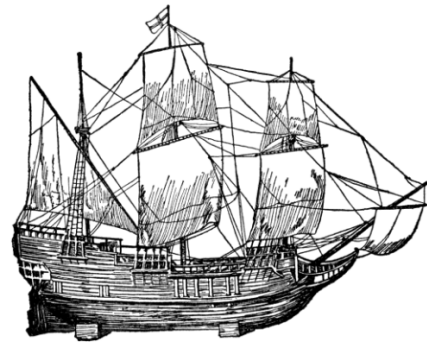
4.

A model maker wants to make a model of a ship

He will use a scale of 1:50

The ship was 100ft long

1 foot = 0.3 m



How long will the model ship be in cm?

Show your working

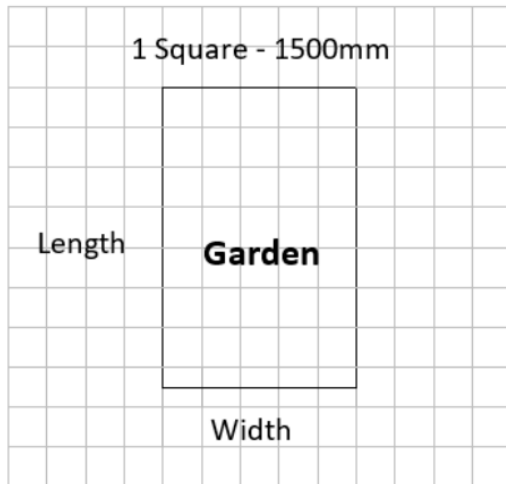
cm

(3 marks)

Open Awards

5.

Simon is redesigning his garden. He has drawn his garden on the diagram below where 1 square = 1500mm.



Using the grid, calculate the actual length of the garden in metres? (2 marks)

Show your calculations and/or workings out here:

Write your answer in this box.

Calculator Questions

NCFE

1.

Aria is involved in a community project group.

The group are planning to build a pond in the garden of the local hospital.
The pond has a path around it.

On a scale plan, the width of the path is 6.7 cm

The scale used on the plan is 1 : 25

Calculate the actual width of the path.

[1 mark]

Your answer:	cm

2.

Asif wants to grow potatoes.

The **GrowPotatoes** website gives these instructions for planting potatoes:

Potatoes should be planted in rows.

There must be 75 cm between the rows,
and 50 cm between each plant in a row.

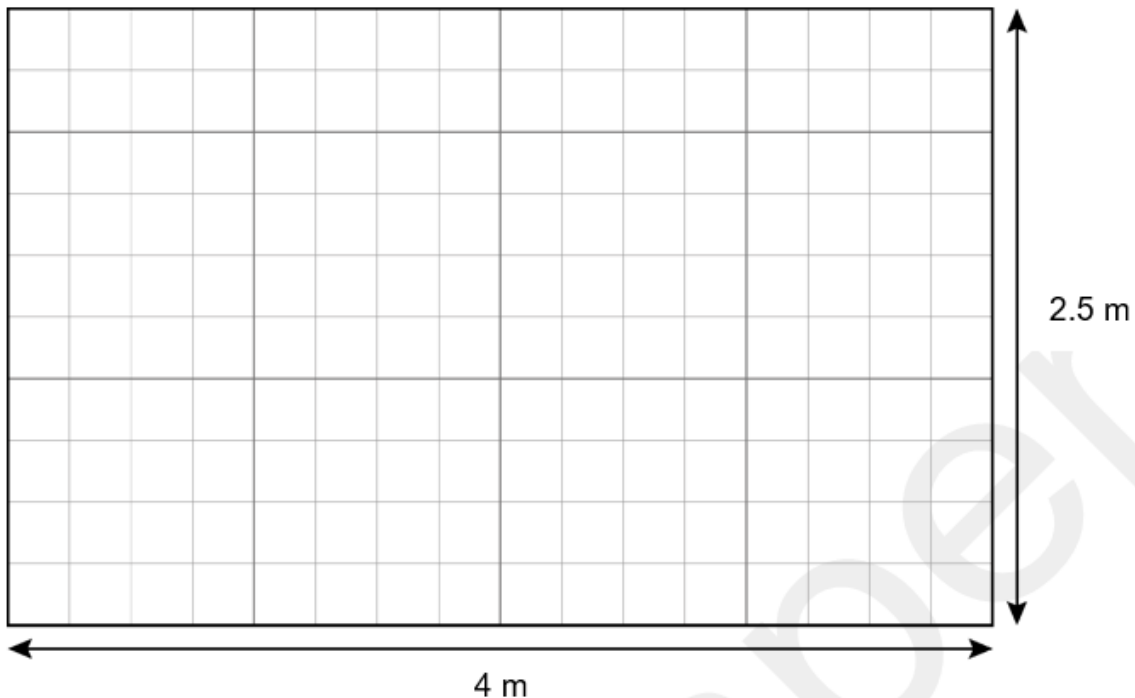
There should be a gap of at least 50 cm
between the plants and the edge of the plot.

The space for planting potatoes is a rectangle measuring 4 m by 2.5 m

Use the scale plan on the next page to show how the potato plants should be arranged to fit in the most potato plants.

Draw a cross (+) to mark the position for each plant.

[2 marks]



3.

On a scale drawing a water pipe is 27 cm long.

The drawing has scale 1 : 50

Calculate the actual length of the water pipe.

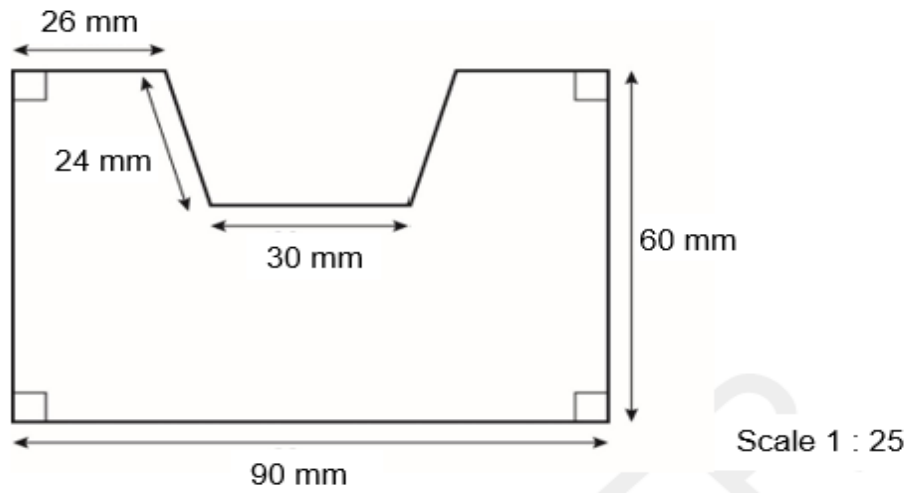
Give your answer in metres.

[2 marks]

Your answer:	m

4.

Fred has this scale plan of a kitchen worktop:



The worktop has one line of symmetry.

Fred will put tape along each edge of the worktop.

He can cut and join the tape.

A roll of tape is 5000 mm long and costs £4.38

Work out the total cost of the tape Fred needs.

[4 marks]

PAST PAPER

Your answer:

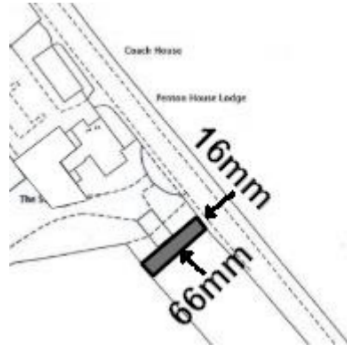
£

City & Guilds

5.

An estate agent needs to know the area of a plot of building land.

This plan shows the building land.



Scale 1:1250

 = building land for sale

What is its area?

Show your working

Working area for calculation, ending with a box for the answer in m^2 .

(3 marks)

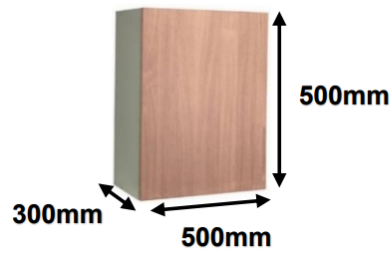
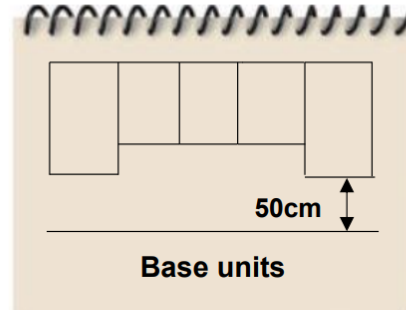
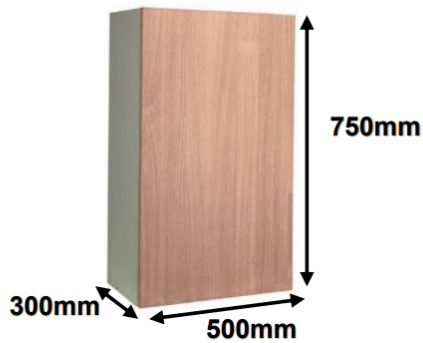
6.

A kitchen designer needs to draw a scale plan for a customer's new kitchen.

The customer gives the kitchen designer this sketch to show how she would like the cupboards to fit above the worktop.

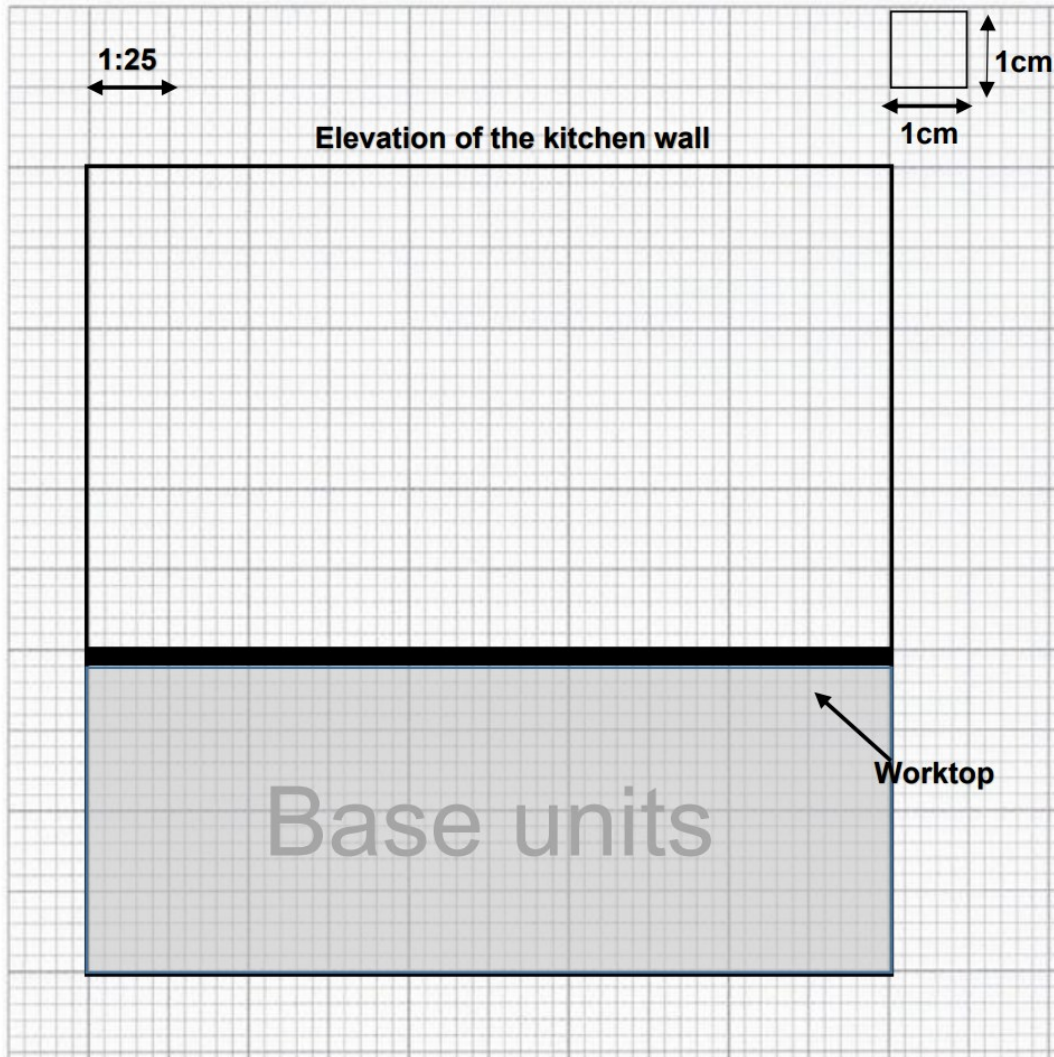
The base of the large cupboard needs to be 50cm above the top of the worktop.

Diagram not to scale



Use the scale plan of the elevation of the kitchen wall to show where the kitchen designer should draw the cupboards.

Space for working

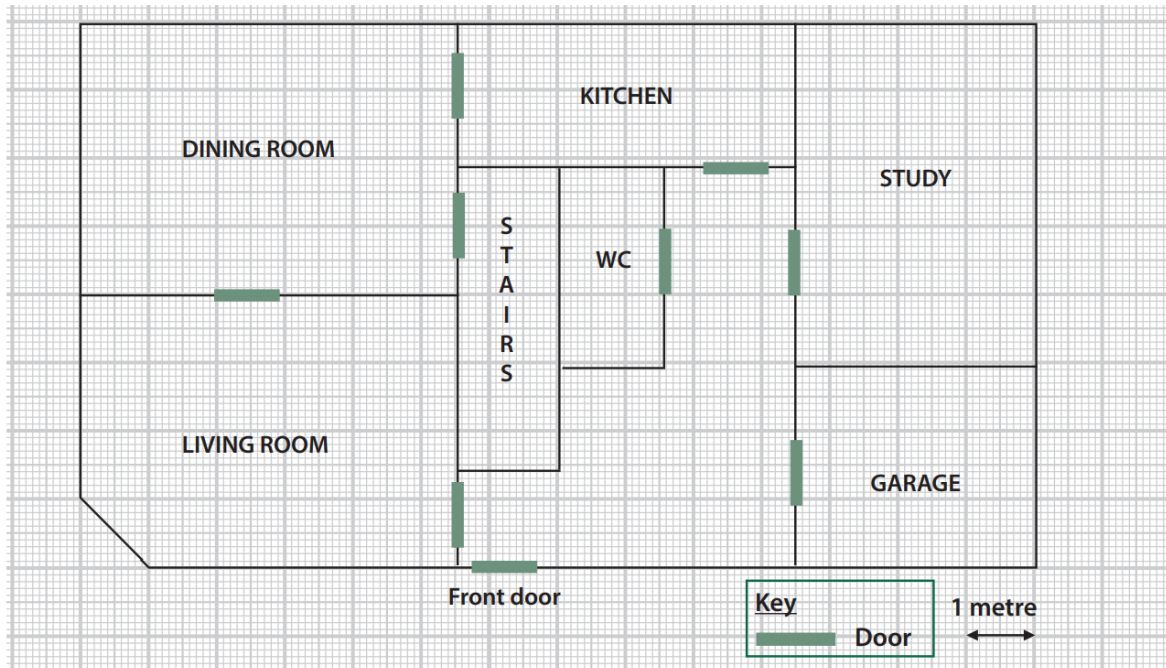


(6 marks)

Highfield

7.

A customer has asked you to install a new heater in their living room. You have this floor plan:



You need to work out the volume of the **living room** so that you can advise the customer which size of heater you need to install. There are 3 heaters to choose from:

	Elite	Deluxe	Supreme
Suitable for rooms of capacity:	1765-2400ft ³	1050-1750ft ³	880-1590ft ³

The height of the living room is 2.2m

$$35.3\text{ft}^3 = 1\text{m}^3$$

Which heater would you recommend for the customer's living room?

Level 2 Maths Scale Exam Questions

Show your working out and write the answer in the box below.

(5 marks)

Answer: _____

8.

You are helping to create a new play area at the nursery.

The play area needs to be a rectangle that has an area of 54m^2

You need to have the following equipment in the play area and you know that:

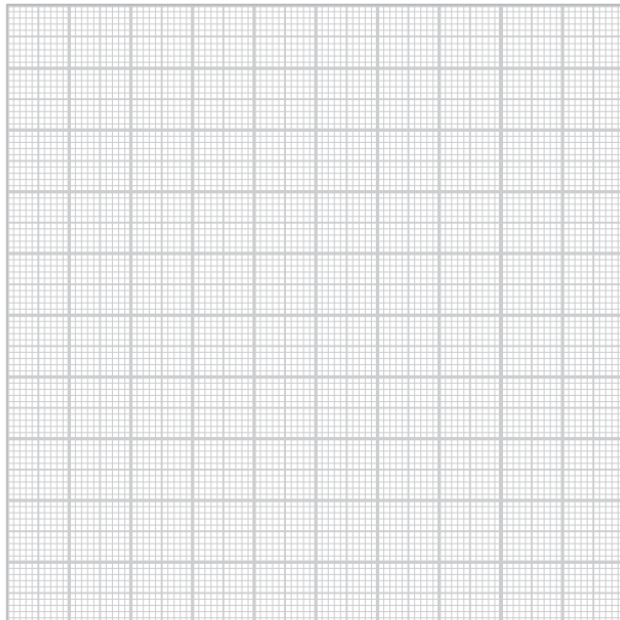
- the see-saw measures $2.4\text{m} \times 0.5\text{m}$
- the climbing frame measures $2\text{m} \times 3\text{m}$
- the sand pit measures $1.8\text{m} \times 3\text{m}$
- each piece of equipment needs at least 1m clearance from the edge of the playing space and other pieces of equipment

- Draw the outline of the play area on the grid below.
- Draw and label the play equipment on the play area.

There is a planning grid and a box for working on the next page.

Draw your final answer on the grid below.

(6 marks)



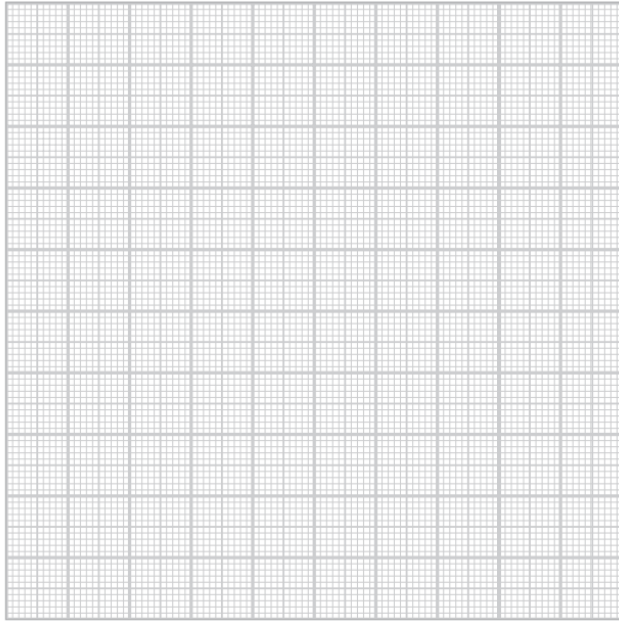
Scale

1m



Level 2 Maths Scale Exam Questions

You may use this grid to plan the play area. PLANS WILL NOT BE MARKED.



Scale
1m



Show your working out in the box below.

9.

You make several craft items which you sell online.

One of the items you make is a wooden photo frame.

The photo frame is made of:

- A back board measuring 40cm x 25cm
- A top and a bottom piece measuring 45cm x 5cm each
- Two side pieces measuring 20cm x 5cm each

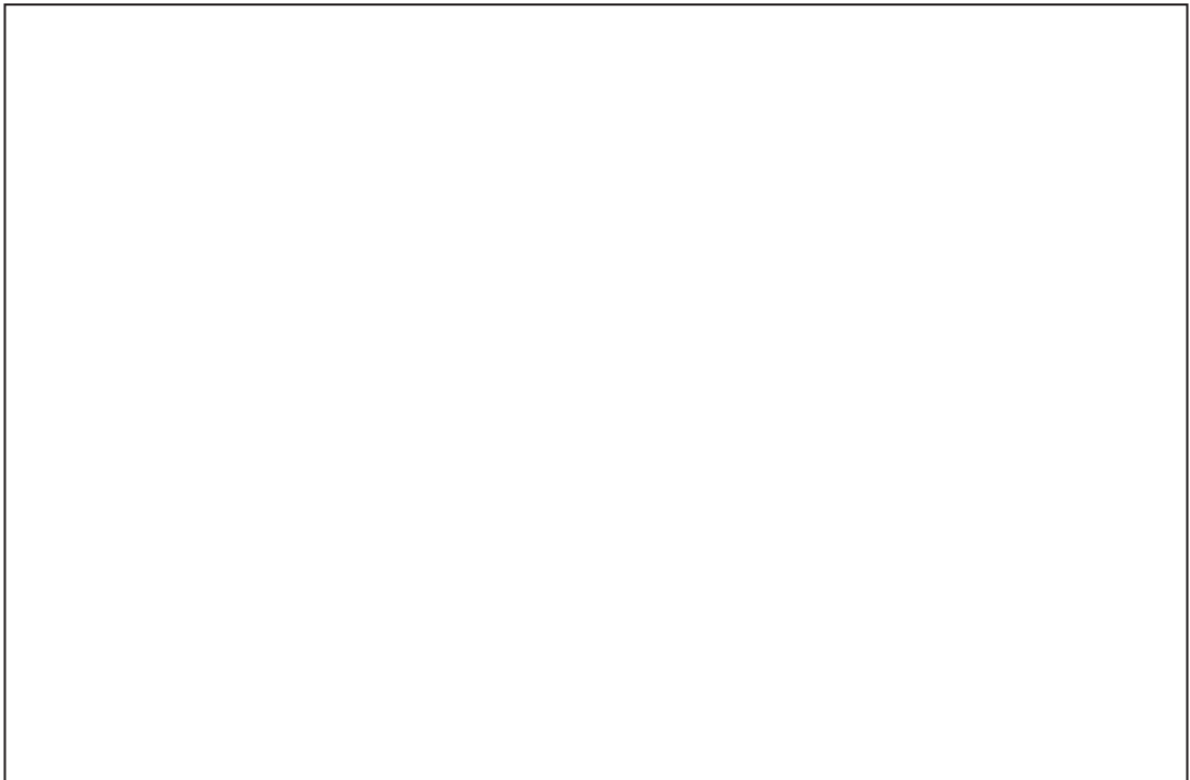
Make a plan of the pieces of wood that will make up the frame.

Use the graph paper on the next page to draw the 5 pieces of wood.

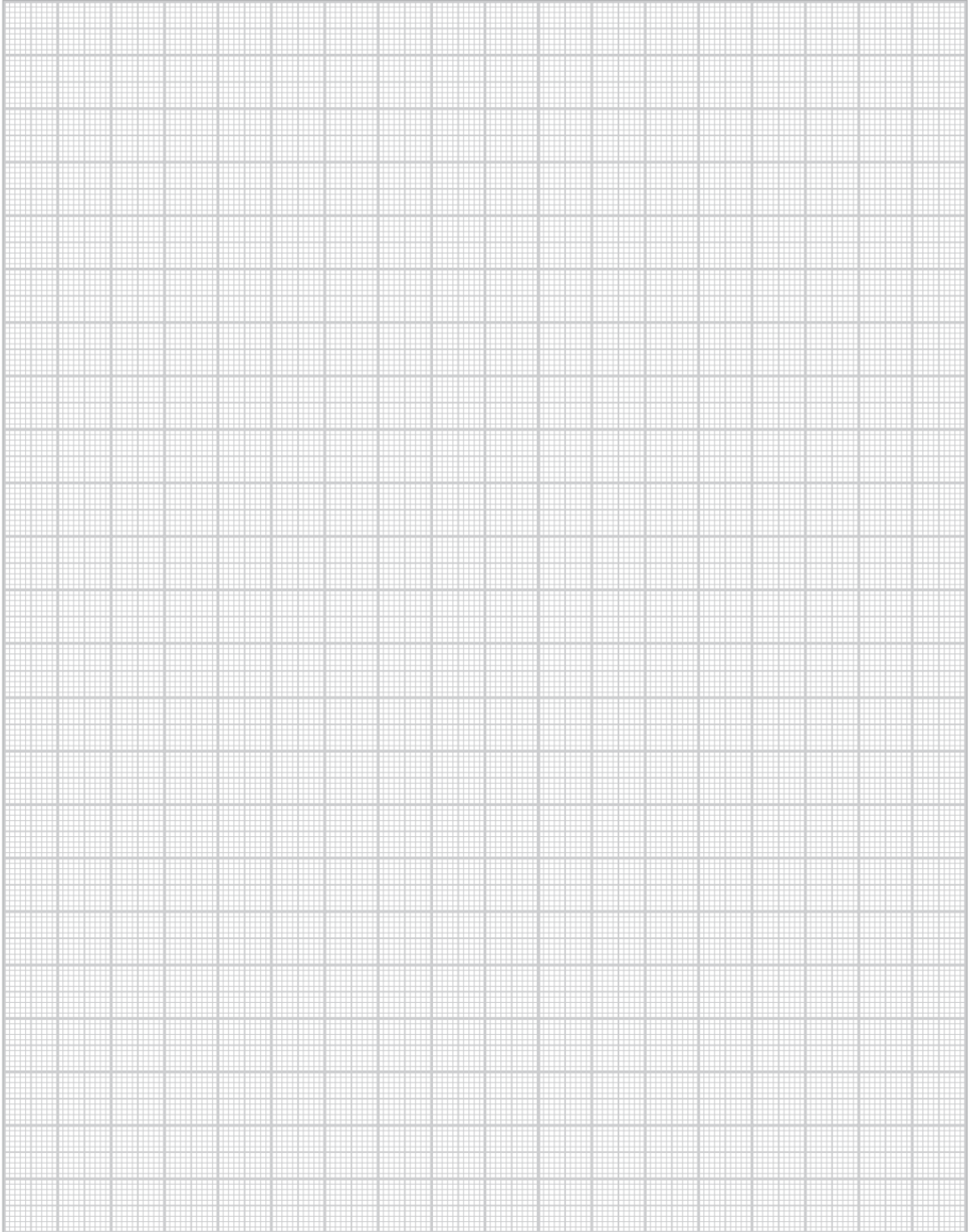
Use a scale of 1:5.

Show any workings in the box below.

(5 marks)



Level 2 Maths Scale Exam Questions

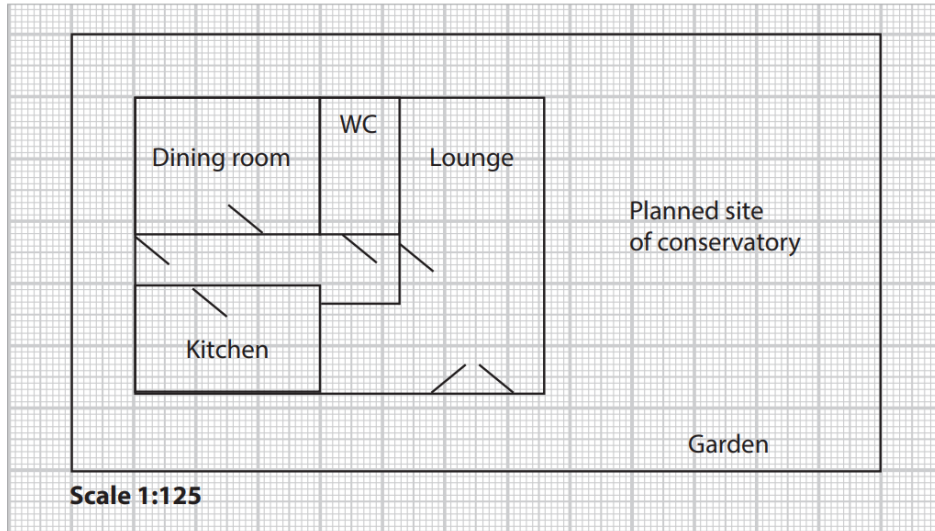


10.

The property development company buys a house.

They are going to build a conservatory on the outside of the longest wall of the lounge.

This is the scale plan of the ground floor of the house and the garden.



The floor area of the conservatory must not be greater than $\frac{1}{3}$ of the floor area of the house.

The length of the side attached to the lounge wall will be 4.8 metres.

They will build the largest conservatory they can.

How wide will the conservatory be? State the correct units in your answer.

Show your working out and write the answer in the box below.

(6 marks)

Answer: _____

AQA

11.

The table shows the items needed for the playground.

	Space needed
1 climbing frame	6 m by 6 m square
1 swing set	10 m by 4 m rectangle
1 sandpit	semicircle with radius 6 m
2 rockers	each 2 m by 2 m square

The playground is drawn to a scale of 1 to 200 on a centimetre grid.

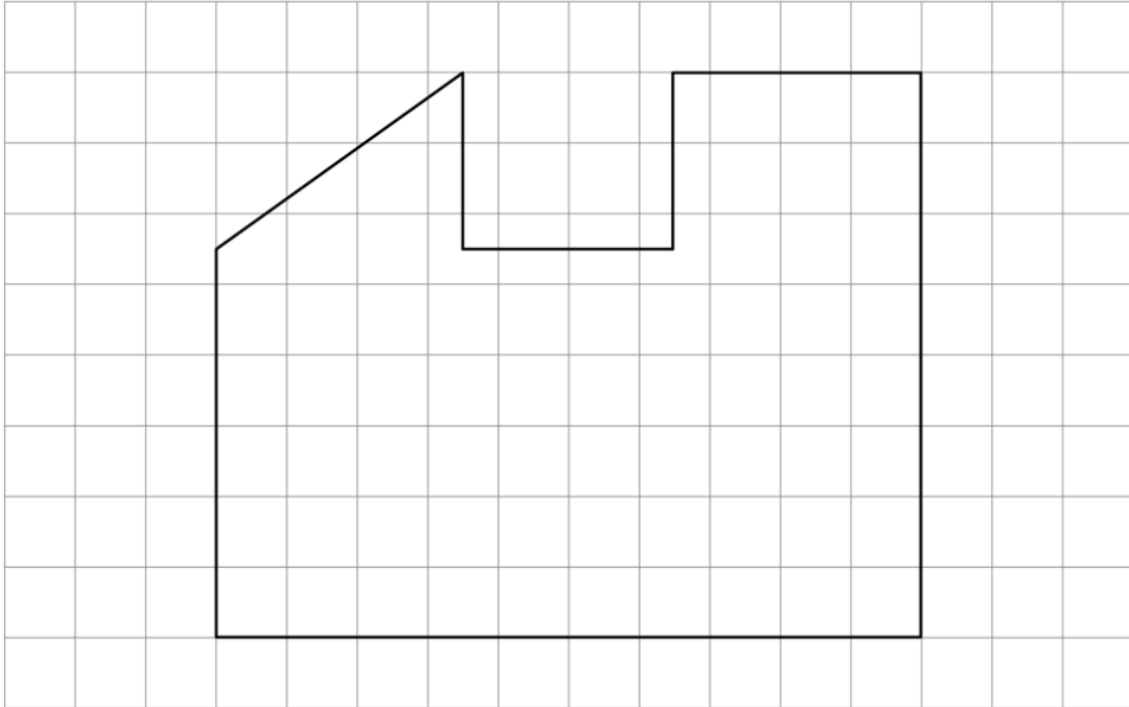
On the grid, design a possible playground.

[5 marks]

Level 2 Maths Scale Exam Questions

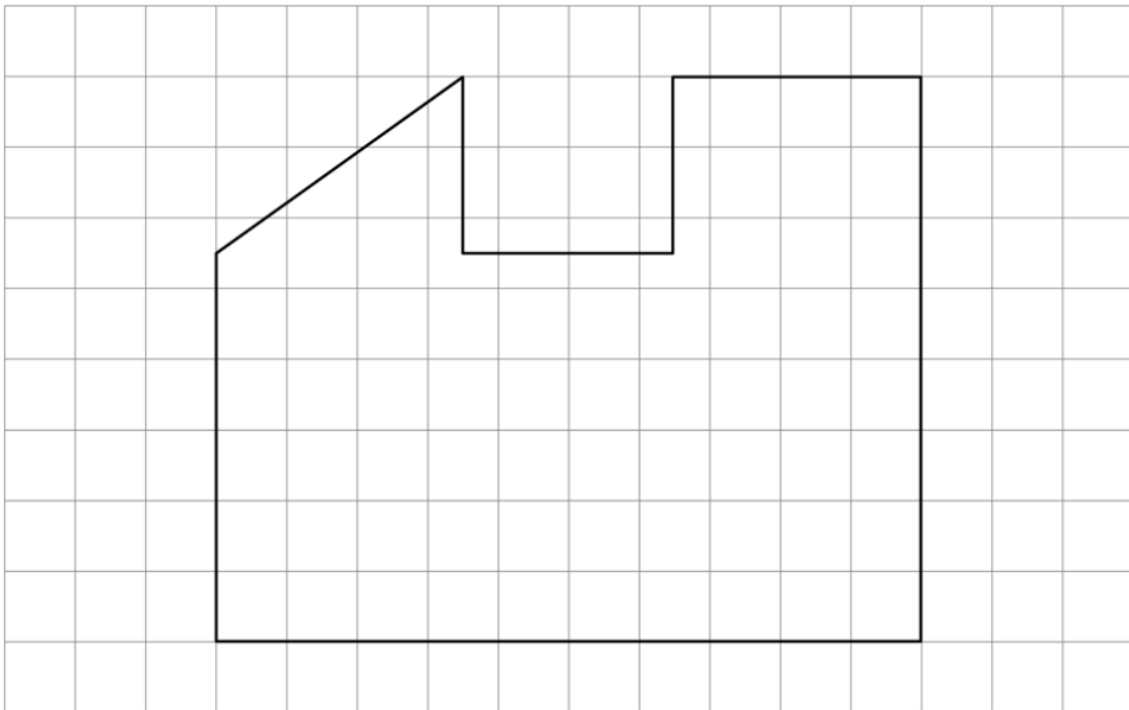
Practise on this grid.

Scale: 1 to 200



Put your answer on this grid.

Scale: 1 to 200



12.

Pete has a scale diagram of the living room in the apartment.

Pete wants to cover one wall with wallpaper.

The width of the wall on the scale drawing is 15.9 cm

The scale is 1 : 60

The wallpaper Pete wants

comes in rolls of width 0.53 m and length 10.05 m

costs £13.85 per roll.

The height of the room is 2.65 m

Pete cuts the rolls into lengths of 2.65 m

Work out the total cost of the rolls of wallpaper that Pete needs for the wall.

[6 marks]

Answer £ _____

13.

Molly has a scale drawing of the side elevation of the conservatory.

The scale of the drawing is 3 : 50

The height of the conservatory on the scale drawing is 23.4 centimetres.

Is the actual height of the conservatory **less than** 4 metres?

You **must** show your working.

[3 marks]
