1B
You and your friend will meet in Sweden for the holiday.
You will travel from Northern Ireland.
Your friend will travel from the USA.

You both need to exchange money into Swedish krona.
These are the exchange rates for GBP (British pound) and $ (US dollar).

Exchange rates
£1 = 12 Swedish krona
1 Swedish krona = 0.25 US dollars

You will take 3500 Swedish krona each to spend.

Work out how many pounds you need to exchange **and** how many dollars your friend needs to exchange.

Show your working

You, pounds £ _____

Friend, dollars $ _____

(4 marks)

1C
Check one of your calculations in **1A** or **1B**.
Use a **different** method to the one you used originally.

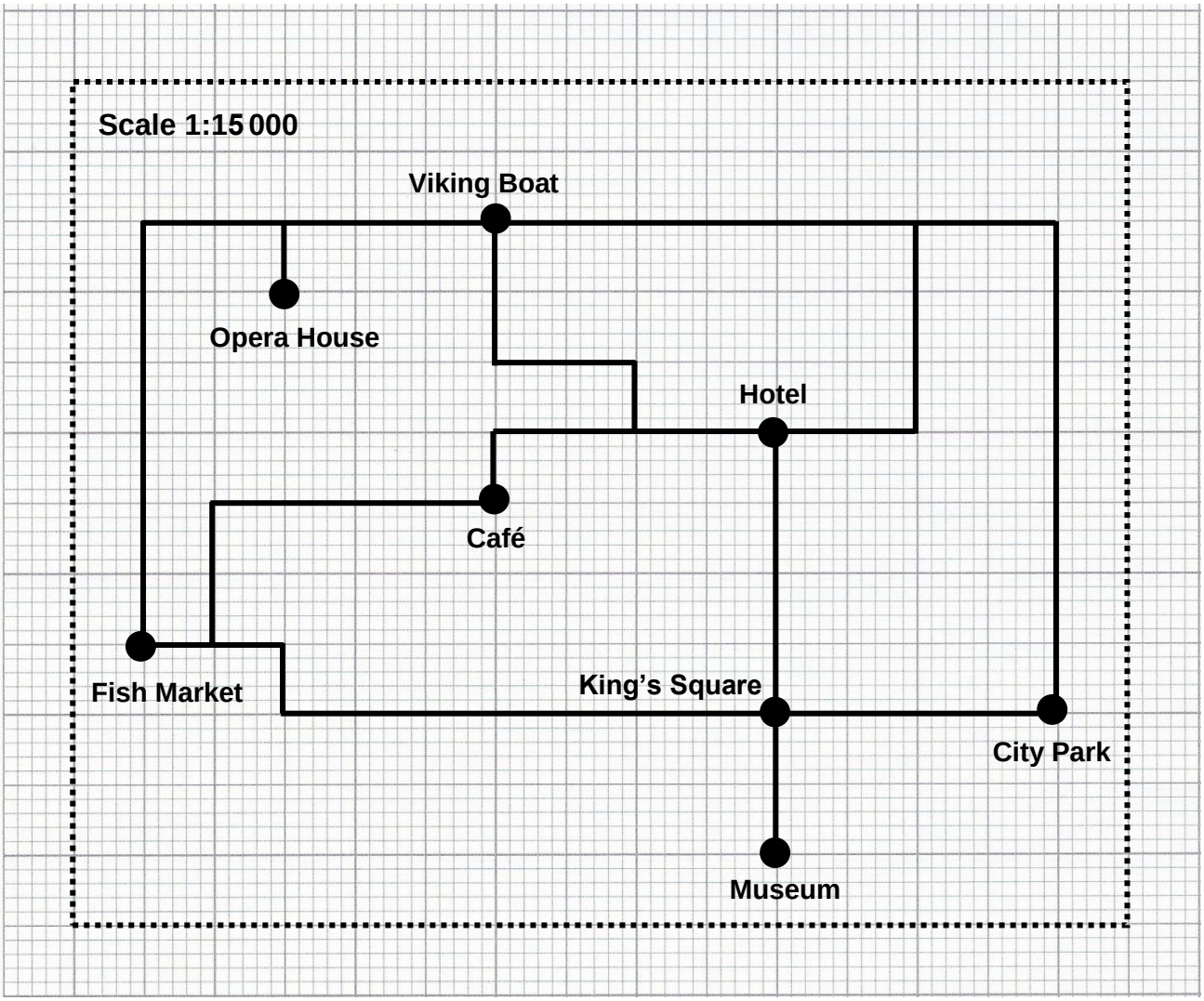
The calculation I am going to check is in **1A** ☐ **1B** ☐
(Tick one box)

Write your check here

(1 mark)

1E

You and your friend will go on a sightseeing trip in the city.
You plan a route to start and finish at the hotel.
You want to visit the City Park, Viking Boat and Fish Market. You want to go to the café for a meal.
This is a simplified scale plan of the city.



Plan your route showing the order of the places you want to visit.
Work out the distances between each place on your route **in metres**.

Work out the total distance of your route **in kilometres**.
Complete the table.

Space for working

Order	Places to visit	Distance
Start	**Hotel**	
First		**m**
Second		**m**
Third		**m**
Fourth		**m**
Finish	**Hotel**	**m**
	Total distance	**km**

(6 marks)

1F
You need to know how long it will take to walk your route.

A typical person can walk at a speed of **6 km in one hour**.

Work out how long it will take to walk between each place to visit.
Round your answers to the nearest minute.

Complete the table.

Show your working

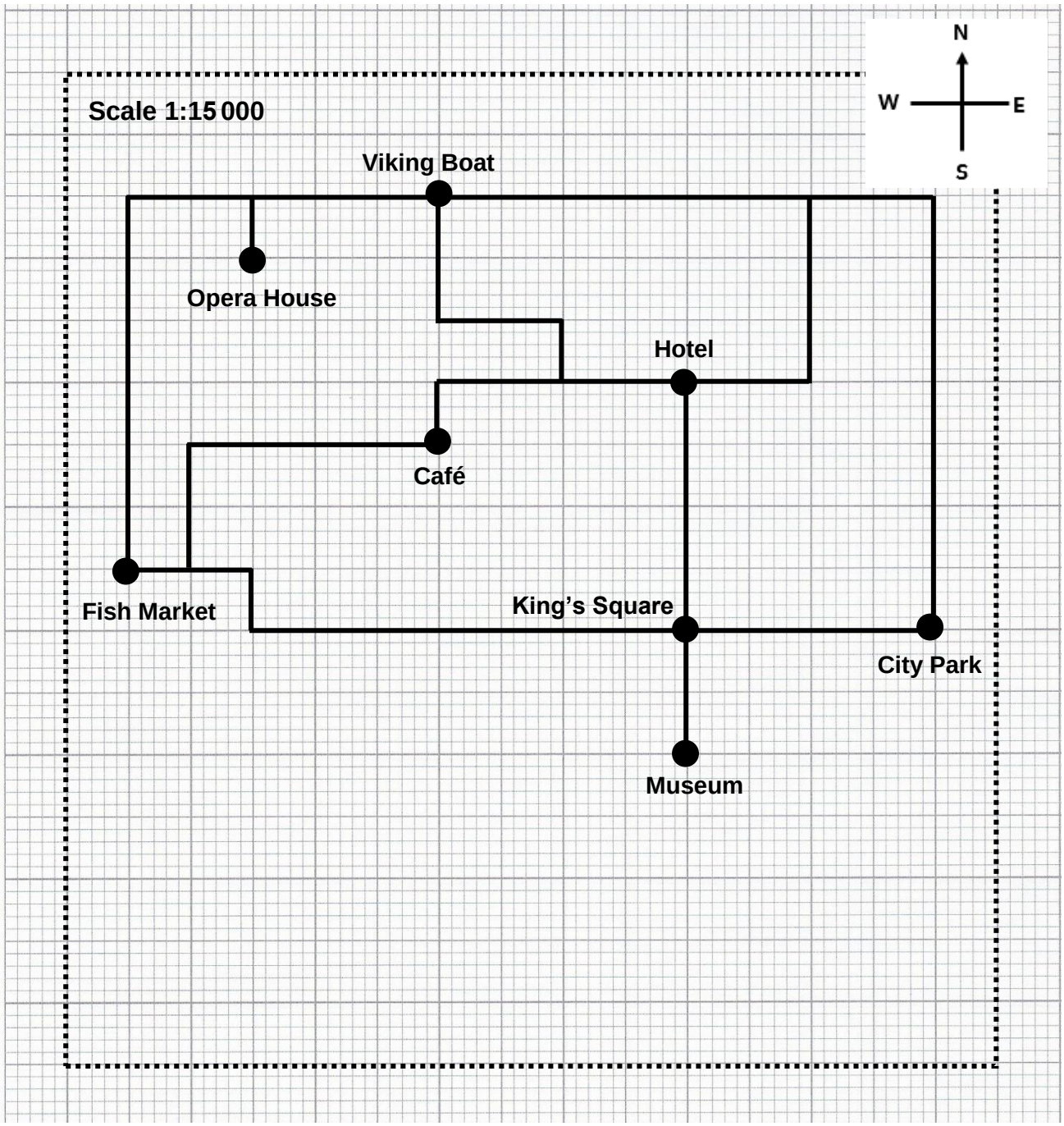
Route from	Time (minutes)
Hotel to first place	
First place to second place	
Second place to third place	
Third place to fourth place	
Fourth place back to hotel	

(4 marks)

1G

You are going to see a concert. The concert hall is 1500m west of the museum. Mark the concert hall clearly on the plan.

Label the diagram.



(4 marks)

Task 1 Camping

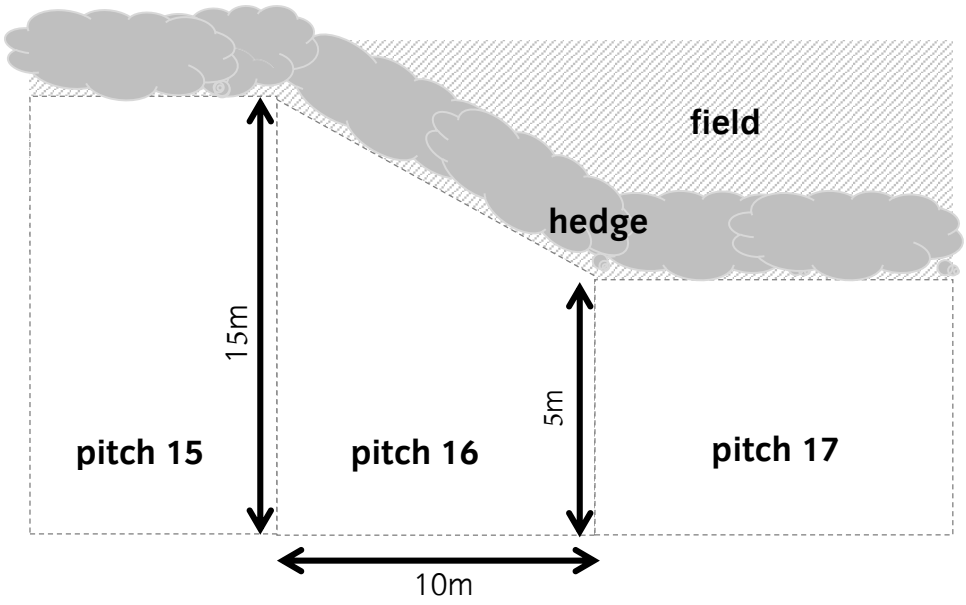
There are **25** marks available for this task.
You should check all your work as you go along.

Introduction
This task is about planning a camping trip with a group of friends.

You have booked a pitch (space) at a campsite.

1A
You have three tents and need to plan where they will go on your pitch (pitch 16).

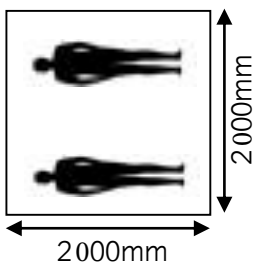
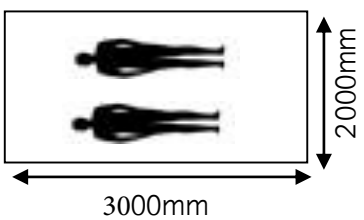
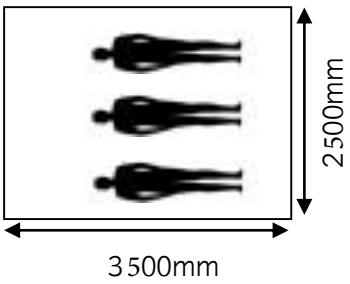
Here is a rough sketch of part of the campsite.



Choose a suitable scale and draw a **scale plan** of pitch 16. Show your scale.
Use the graph paper opposite.

(4 marks)

1B
These are the dimensions of the tents you and your friends will take. (Diagrams not to scale)

Tent A - You and Sam	Tent B - Niamh and Aisling	Tent C - Liam, Declan and Michael
		

Draw the three tents to scale on your plan.

ADD YOUR OWN SCALE

The tents must be

- at least 1 metre away from the edges of the pitch
- at least 2 metres away from each other.

Label your plan clearly. Show which friends will sleep in each tent. **(5 marks)**

1C

Compare the sizes of the three tents and work out which one has the most space **per person**. You must include calculations to support your answer.

The tent with the most space per person is (Tick one)	**A**	**B**	**C**

Show your working

Space per person_____m²

(3 marks)

1D
This formula gives the cost to stay at the campsite.

$$C = N(7T + 2P)$$

where **C** is the total cost for the group in pounds
N is the number of nights
T is the number of tents and
P is the number of people in the group

You and your friends will stay for **5 nights.**

Use the formula to work out the total cost for the group.

Show your working

Total cost for the group £ _____

(3 marks)

1E
You must pay a deposit of 25% of the total cost when you book and pay the remainder on arrival.

How much is the deposit?

How much must you pay on arrival?

Show your working

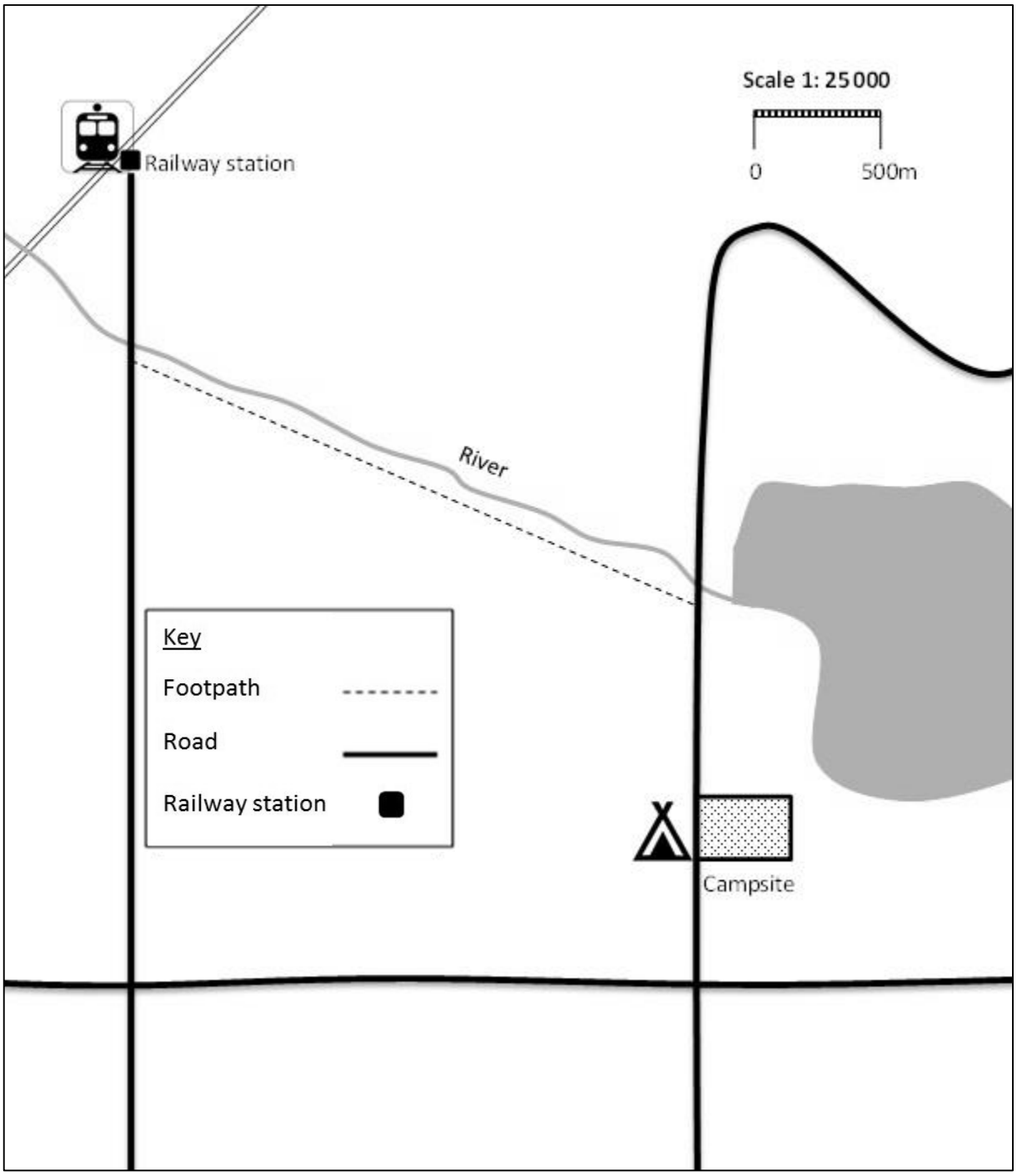
Deposit to pay £_____

Amount to pay on arrival £_____

(3 marks)

1F

You will walk from the railway station to the campsite.



Measure the distance of the shortest route using <u>roads</u> only. Give your answer in **kilometres**.

Space for working

Distance of shortest route _____kilometres

(4 marks)

1G

It takes you 5 minutes to drive each mile.

How many minutes will it take you to walk from the railway station to the camp site by the shortest route?

1 kilometre = $\frac{5}{8}$ of a mile

Space for working

Number of minutes _____

(3 marks)

1G

To make the concrete for the fountain and a seating area, the builder will mix cement, sand and stone together with water.

The table below shows how much cement : sand : stone he would mix with water to make 0.5**m³ of concrete.**

Cement	Sand	Stone		Concrete
			**mixed with water makes**	
2 bags (1 = 50kg)	**3 wheelbarrows**	**3 wheelbarrows**		0.5**m³**

The builder works out he needs a total of 2**m³ of concrete.**

How much cement, sand and stone will he need to mix with water to make 2**m³ of concrete?**

Show your working

Cement _____ bags

Sand _____ wheelbarrows

Stone _____ wheelbarrows

(4 marks)

1H

The builder's company guidelines state that he should **not** lift more than 100 pounds on his own.

1 kilogram = 2.2 pounds

Can the builder lift a bag of cement on his own? Explain your answer.

Show your working

Can the builder lift a bag of cement on his own? (Tick one box)	**Yes**	**No**

Explanation

(2 marks)

1E

The theatre company wants to build a water feature outside the theatre.

The picture below shows the fountain they would like.

The builder wants to draw an accurate scale plan of the fountain using a scale of 1 : 25

How long **in centimetres** will the diameter of the fountain be on the scale plan?

Show your working

Length of diameter on scale plan_____ **cm**

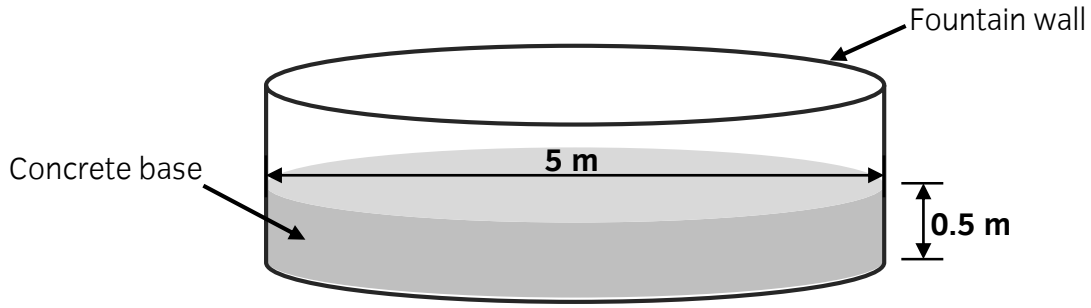
(3 marks)

1F

The builder must work out the volume of concrete that he will need to make the base of the fountain.

The picture below shows the dimensions of this concrete base.

Not drawn to scale



Work out the total volume of concrete the builder needs to make the base.

Make sure you put the units on your answer.

Use the formula	$\mathbf{V = \pi r^2 h}$
Where	**V** = volume of the concrete base ***r*** = radius of the concrete base ***h*** = height of the concrete base
Use	$\boldsymbol{\pi}$ = 3.14

Show your working

Total volume of concrete needed _____

(4 marks)

Task 2 The Garden

Emma has a rectangular plot of land measuring 10m by 6m.

She wants to fit 2 raised flower beds in this plot.

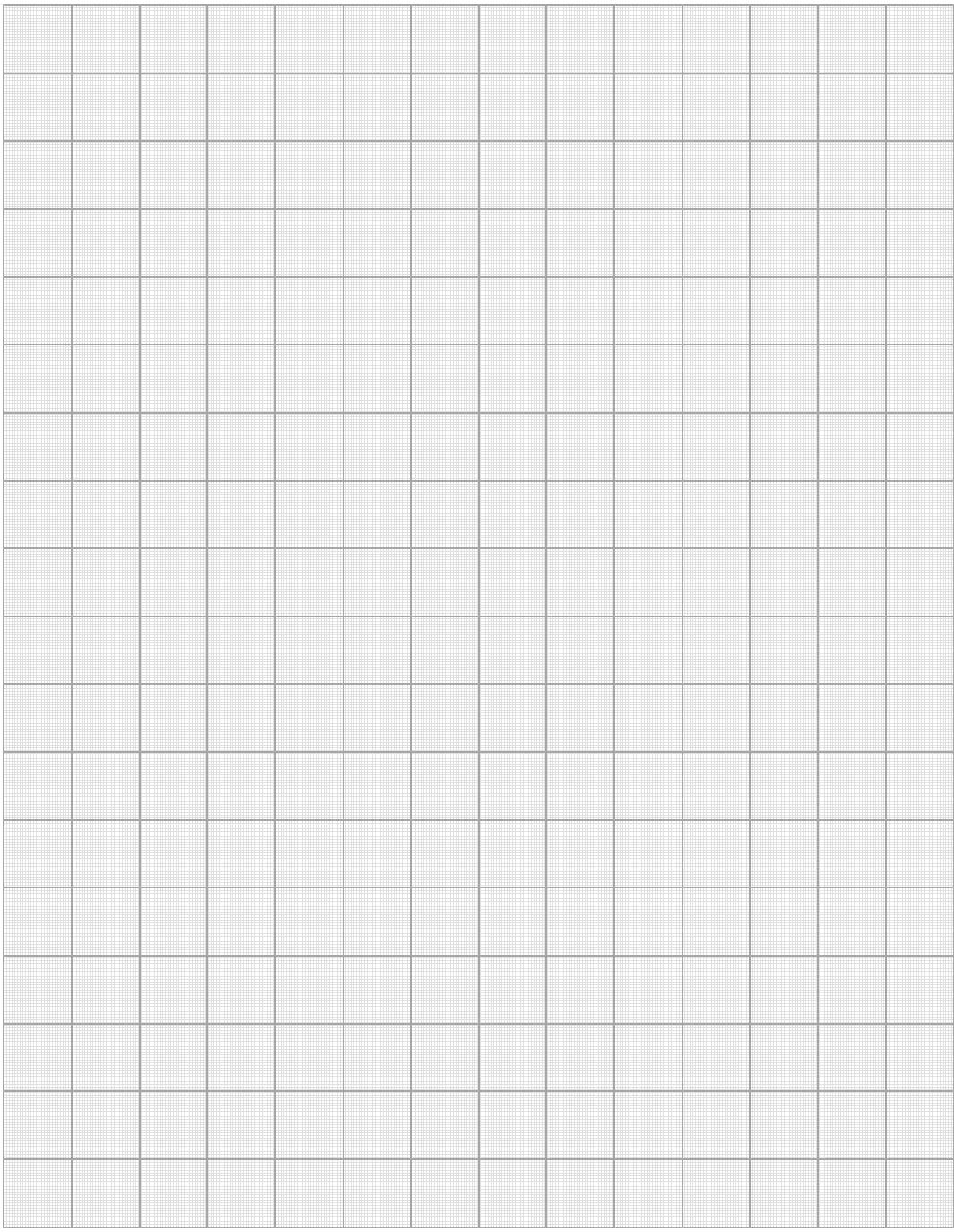
Each raised bed is 3m long and 2m wide.

There needs to be a pathway at least 1m wide around each raised bed.

2a Using the graph paper opposite, draw a scale plan of the plot with the 3 raised beds suitably positioned.

Use a scale of 1:50.

Show working clearly below with sketches if used. **(5 marks)**



Raised beds are 3m long, 2m wide and 110cm high.

Beds need to be filled with topsoil to within 10cm of the top of the container.

Topsoil is delivered in 1000 litre bags.

2b How many bags of topsoil will Emma need to fill all three raised beds?

Justify your answer using suitable calculations. **(5 marks)**

$1m^3 = 1000$ litres

Show working clearly below.

Number of bags needed: _____

2c Show a check you have used in your calculation in 2b. **(1 mark)**

Last week 1750 hot drinks were sold in Ella's Café.

The ratio of cups of coffee to cups of tea sold is

5:2. A cup of coffee on average costs £2.50.

A cup of tea on average costs £1.50.

1e How much can Ella expect to have made through sales of cups of coffee and tea last week?

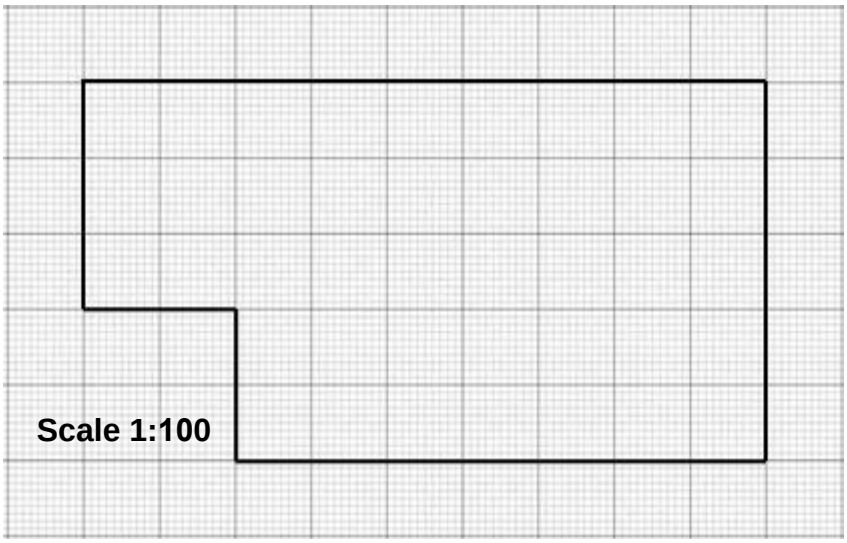
(4 marks)

Show your working clearly below.

The scale drawing below shows a plan of the storeroom in Ella's café.

Ella intends to paint the floor area with hardwearing floor paint.

Plan of Storeroom



Ella has a tin of floor paint that will cover up to 5 m².

1c Ella thinks this will be enough paint to give the floor 2 coats of paint.

Is she correct? **(7 marks)**

Use calculations to justify your answer on the opposite page.