

Sample 2 – Level 2			
Example A			
	Max	Mark	Comments
1A	4	4	Correct plan
1B	5	4	All correct except distance between tents
1C	3	3	Correct tent identified with correct workings and space per person
1D	3	3	Correct total cost for the group
1E	3	3	Correct deposit and amount to pay on arrival
1F	4	4	Correct distance in km
1G	3	3	Correct number of minutes
2A	4	4	Three correct means
2B	1	1	Correct explanation for choice of average
2C	4	4	Fully correct chart
2D	2	0	Incorrect explanation
2E	3	2	Two correct ranges
2F	1	1	Correct reverse calculation
2G	1	1	Correct interpretation of range
2H	4	4	Correct drawing, and reading, of trend lines
2I	1	1	Correct explanation corresponding with choice
2J	4	4	Correct tree diagram and probability values
totals	50	46	



4800-121 Level 2 Certificate in Essential Skills Application of Number

Sample paper 2



Length of assessment – 1 hour 30 minutes

Total marks available – 50 marks

Candidate Name (First, Middle, Last)

Candidate enrolment number

DOB (DDMMYYYY)

Candidate signature

Assessment date (DDMMYYYY)

Centre number

(46) (A)
good pass.

Length of assessment:

1 hour 30 minutes

You should have the following for this assessment

- a pen with black or blue ink
- a pencil and eraser for graph/diagram work
- a 30cm ruler.
- You may use a calculator.
- You may use a protractor.
- You may use a dictionary.

General instructions

- There are 2 tasks to complete.
- Each task is worth 25 marks.
- You should spend an equal amount of time on each task.
- Read through each task carefully.
- The maximum marks available are shown for each question.
- Show your working out, you may get marks for it.
- Check your calculations.
- Write all working out and answers in this booklet.

***I declare that I had no prior knowledge of the questions in this assessment and that I will not divulge to any person any information about the questions.**



Task 1 Camping

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

Introduction

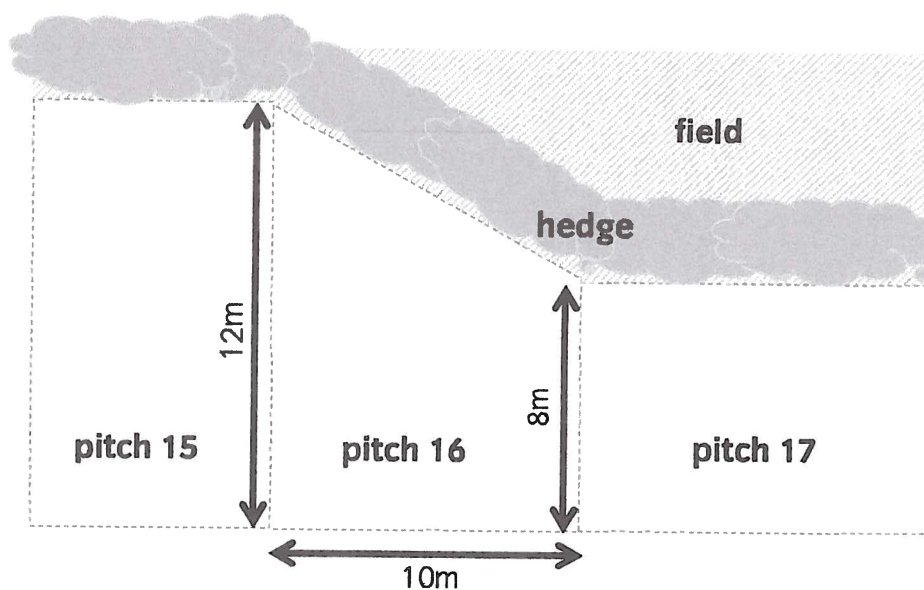
This task is about planning a camping trip with a group of friends.

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 Alsling	Tent C - Liam, Declan and Michael
<p>2600mm 2.6m 2600mm 2.6m</p>	<p>4000mm = 4m 2000mm = 2m</p>	<p>3800mm 3.8m 2800mm 2.8m</p>

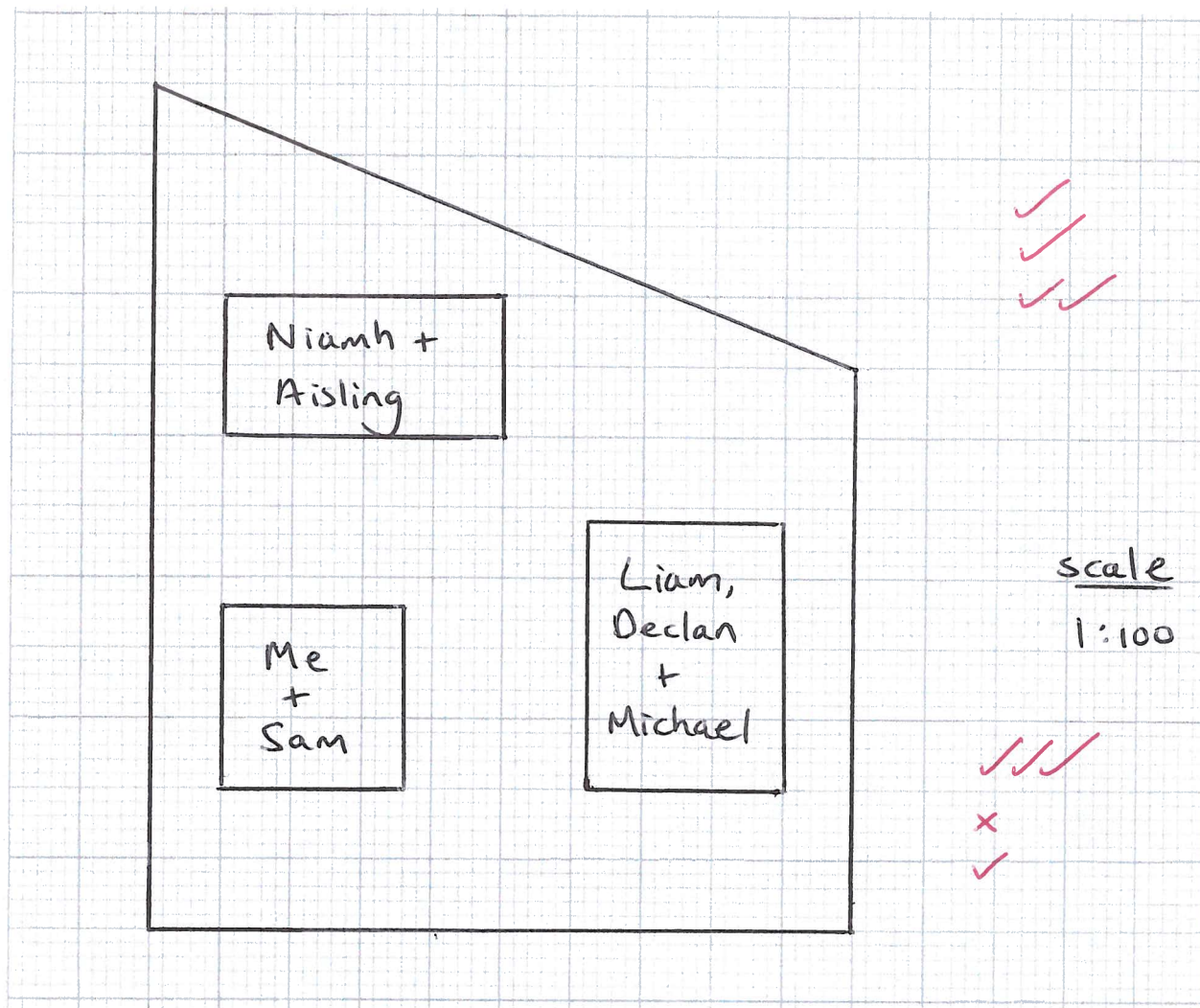
Draw the three tents to scale on your plan.

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

$$\begin{array}{r} \text{A} \\ 2.6 \times 2.6 \\ = 6.76 \end{array}$$

$$\div 2 = 3.38 \text{ m}^2$$

$$\begin{array}{r} \text{B} \\ 2 \times 4 = 8 \\ 8 \div 2 = 4 \text{ m}^2 \end{array}$$

$$\begin{array}{r} \text{C} \\ 3.8 \times 2.8 = 10.64 \\ \div 3 = 3.5 \text{ m}^2 \end{array}$$

Space per person 4 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 **4 nights**.

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

Show your working

$$\begin{aligned} C &= 4(7 \times 3 + 2 \times 7) \\ &= 4 \times 35 \end{aligned}$$

Total cost for the group £ 140

✓✓✓

3

(3 marks)

1E

You must pay a deposit of 35% 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

$$0.35 \times 140 = 49$$

$$140 - 49 = 91$$

Deposit to pay £ 49

✓✓

3

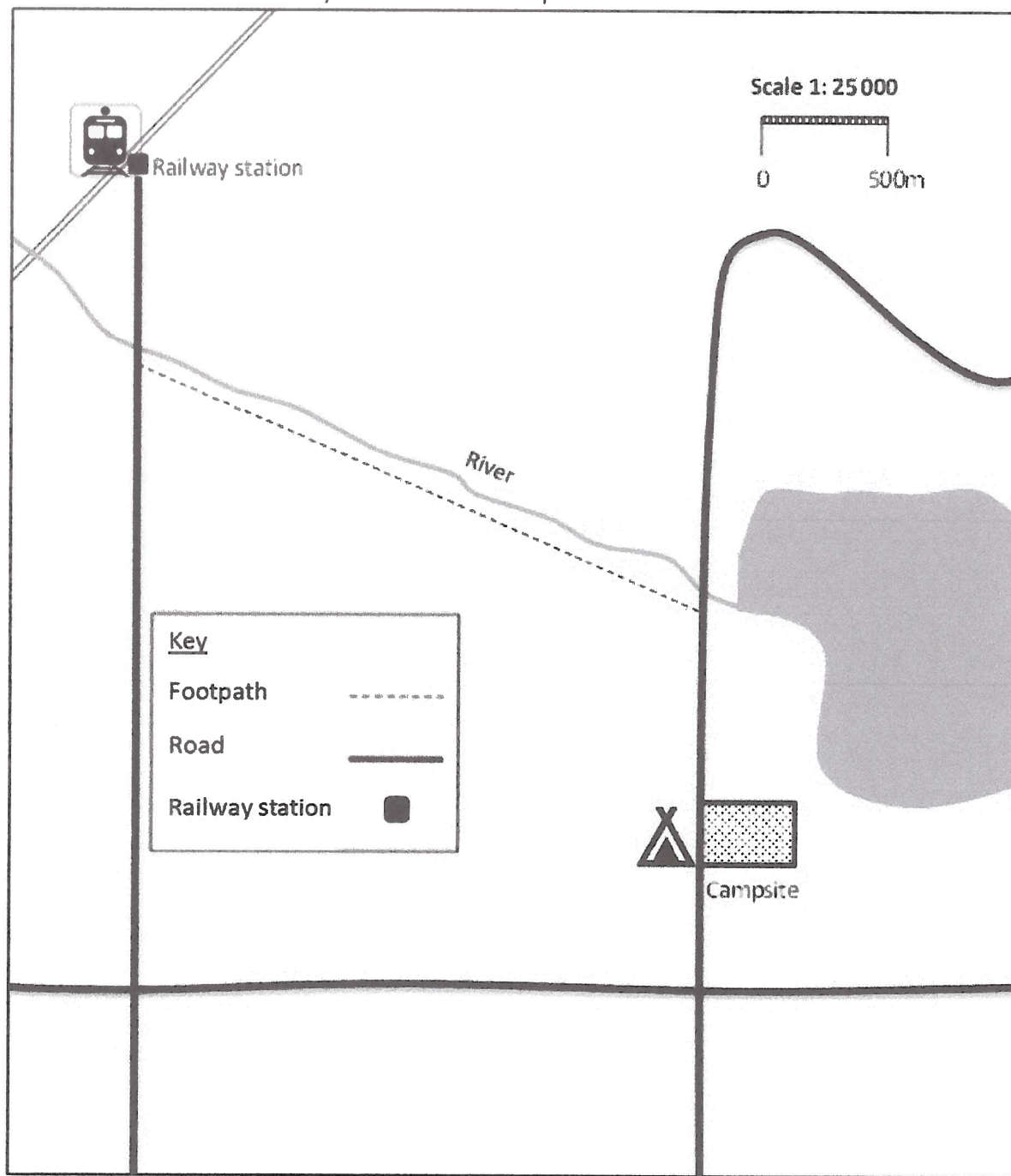
Amount to pay on arrival £ 91

(3 marks)



1F

You will walk from the railway station to the campsite.



Measure the distance of the shortest route using roads and footpaths only.
Give your answer in **kilometres**.

Space for working

15.5 cm

$2 \text{ cm} = 500 \text{ m}$

$\frac{15.5}{2} = 7.75$

$7.75 \times 500 = 3875 \text{ m}$

Distance of shortest route 3.875 kilometres

(4 marks)

4.



1G

It takes you 20 minutes to walk each mile.

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

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

Space for working

$$3.875 \times \frac{5}{8} = 2.421875$$

$$\times 20 = 48.4375$$

Number of minutes 48

(3 marks)

3





Additional space for working and answers

1





Task 2 Hand wash

There are **25** marks for this task.

You should check all your work as you go along.

Introduction

This task is about marketing research for a new hand wash product.

A cosmetics company carries out a survey.

Volunteers try the hand wash and give it a score on a scale of 1 to 10 for the following three categories

- design of bottle
- fragrance
- hands feel clean.

Volunteer	Score for each survey question 1 = strongly disagree 10 = strongly agree		
	I like the design of the bottle	I like the fragrance (smell)	I like how clean my hands feel
A	4	6	7
B	3	7	9
C	6	6	8
D	3	8	6
E	6	8	9
F	3	6	7
G	4	10	6
H	3	2	6
I	4	9	9
J	6	6	10
K	6	10	9
L	6	6	10

54 84 96



2A

Work out a suitable average for the scores for the new hand wash.

Tick the average you will use	Mean <input checked="" type="checkbox"/>	Median <input type="checkbox"/>	Mode <input type="checkbox"/>
(Tick one box)			
Show your working			
$\frac{54}{12} = 4.5$			
$\frac{84}{12} = 7$			
$\frac{96}{12} = 8$			
Design of bottle	4.5	✓	4
Fragrance	7	✓	
Hands feel clean	8	✓	

(4 marks)

2B

Explain why the average you used is the most suitable.

Explanation
it uses all data. ✓

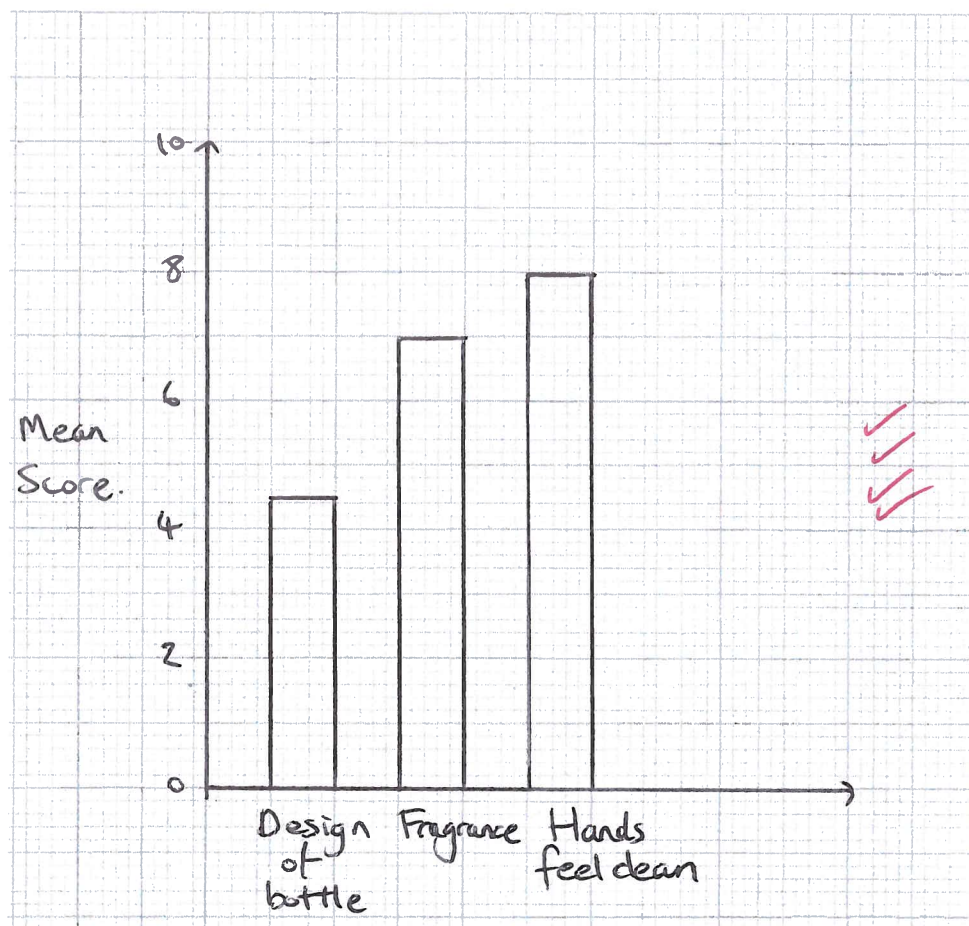
(1 mark)



2C

Draw a suitable chart to compare the **average** scores for the new hand wash from 2A for

- design of bottle
- fragrance
- hands feel clean.



(4 marks)

2D

Explain what your chart shows about what the volunteers thought of the hand wash.

Make two comments.

they rated it highly

(2 marks)



2E

Find the range in scores for the new hand wash for

- design of bottle
- fragrance
- hands feel clean.

Show your working

$$6 - 3 = 3$$

$$10 - 2 = 8$$

$$10 - 7 = 3$$

Design of bottle	3	✓
Fragrance	8	✓
Hands feel clean	3	✗

2

(3 marks)

2F

Check one of your calculations in 2E.

Use a **different** method to the one you used originally.

Write your check here

$$3 + 7 = 10$$

✓

1

(1 mark)

2G

Compare your ranges.

What do they show about the volunteers' opinions?

Make one comment.

Opinions about the fragrance
were least consistent.

✓

1

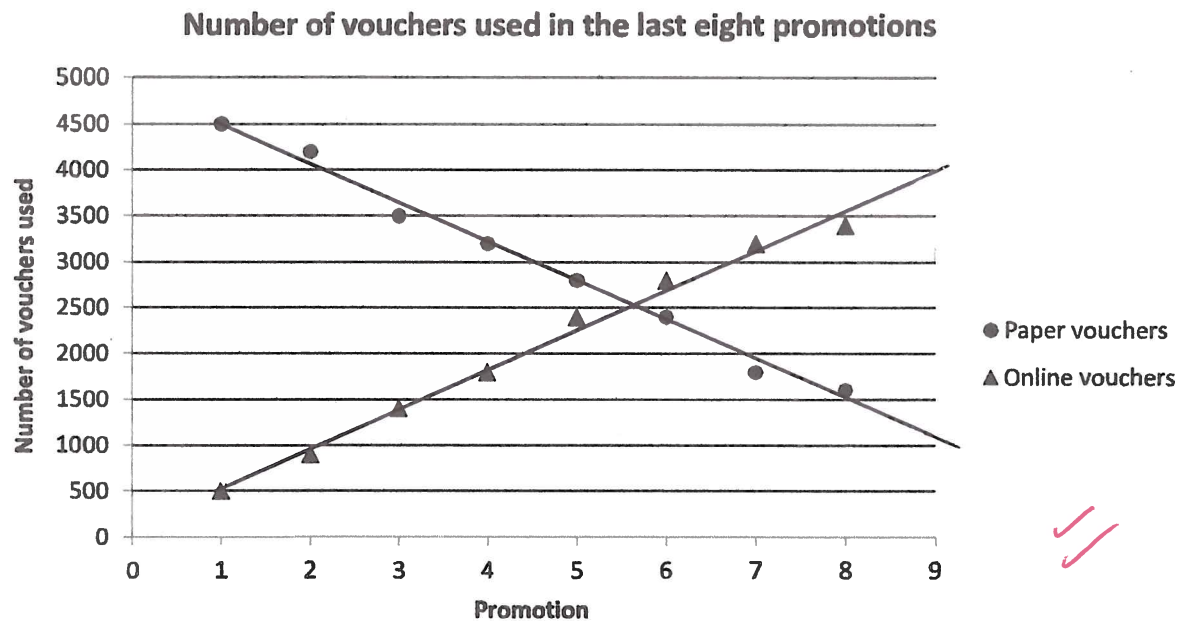
(1 mark)



2H

The cosmetics company that produces the hand wash uses money-off vouchers to promote new products.

This graph shows how many vouchers customers used in the last 8 promotions. Promotion 9 will be for the new hand wash.



Draw trend lines (lines of best fit) on the graph for each type of voucher.

Extend your trend lines and use them to predict how many paper vouchers will be used and how many online vouchers will be used in Promotion 9.

Paper vouchers

1100



Online vouchers

4000



(4 marks)

4





21

The company spends the same amount of money to pay for vouchers for each promotion. Half of the money is spent on paper vouchers and the other half on online vouchers.

Use your results and the graph to decide whether the company should continue to spend money on paper vouchers for Promotion 9.

Explain your answer.

Should the company continue to spend money on paper vouchers? (Tick one)	Yes	No
		<input checked="" type="checkbox"/>
Explanation Use of paper vouchers is decreasing		

(1 mark)

22

As part of the promotion, the company will put a code on each bottle of hand wash.

25% of the codes will win the customer a prize.

1 in 10 of the prizes are cinema tickets.

Work out the probability of not winning a prize.

Draw a tree diagram to show the probabilities of winning cinema tickets **and** of winning other prizes **and** not winning a prize.

Use your tree diagram to work out the probability that a customer who buys one bottle of the hand wash will win cinema tickets.

$100 - 25$	Probability of not winning a prize <u>75%</u>
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Draw your tree diagram here	Space for working
<pre>graph LR A["1/4 prize"] --- B["1/10 Cinema tickets"] A --- C["9/10 other prize"] D["3/4 no prize"]</pre>	$\frac{1}{4} \times \frac{1}{10} = \frac{1}{40}$
	Probability of winning a cinema ticket <u>$\frac{1}{40}$</u>

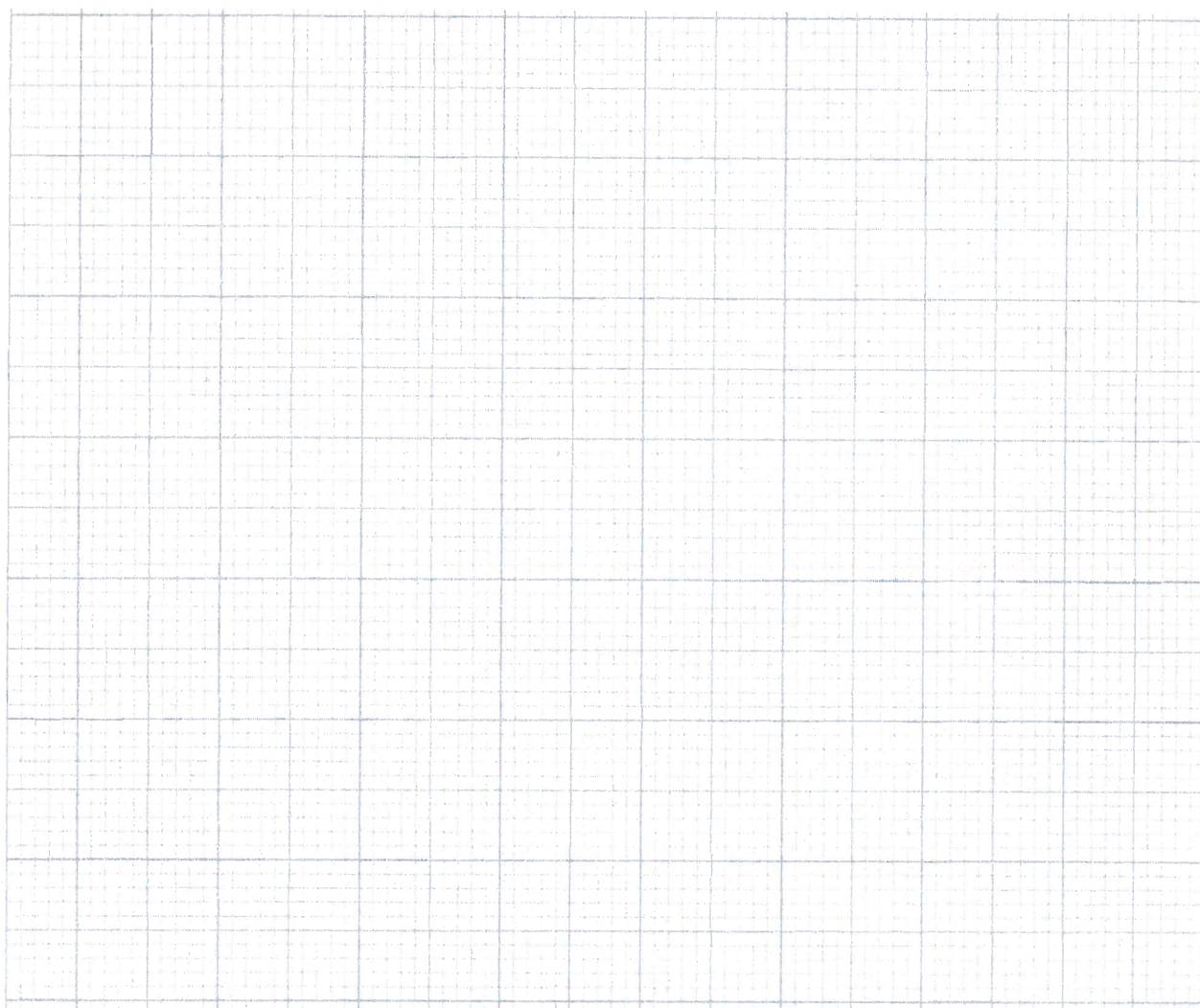
(4 marks)

End of Assessment



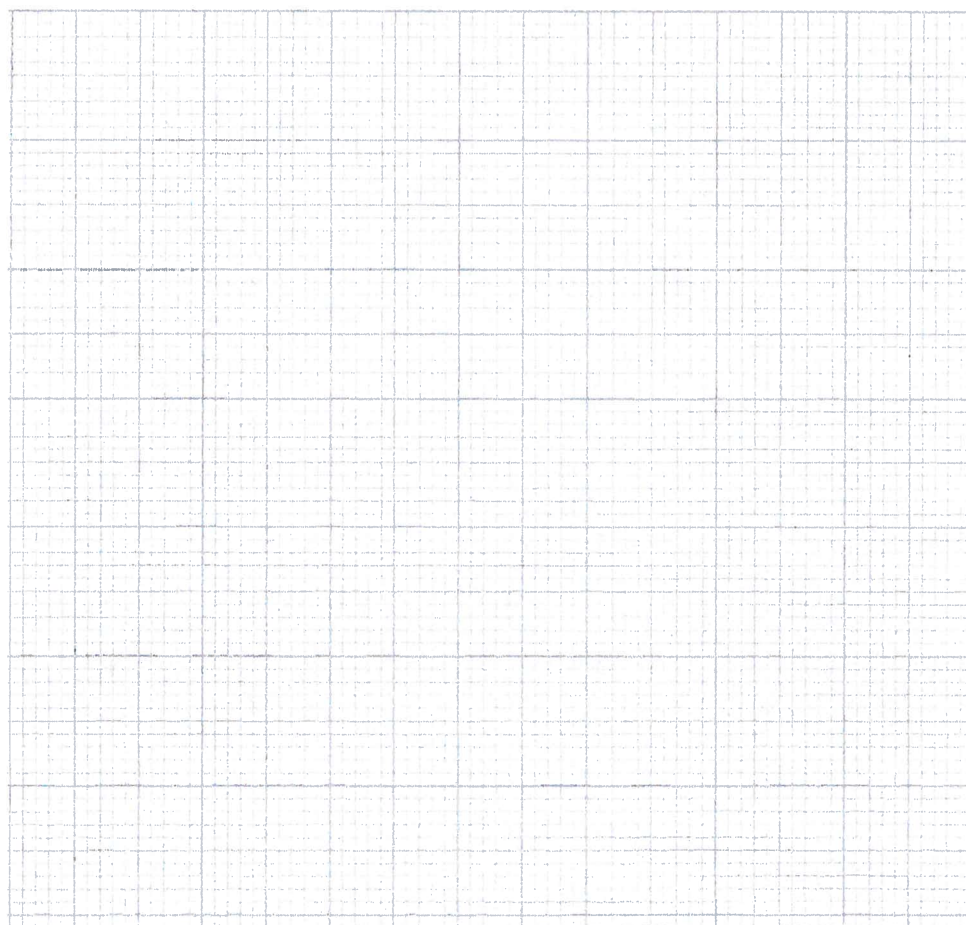


Spare graph paper for 1A and 1B



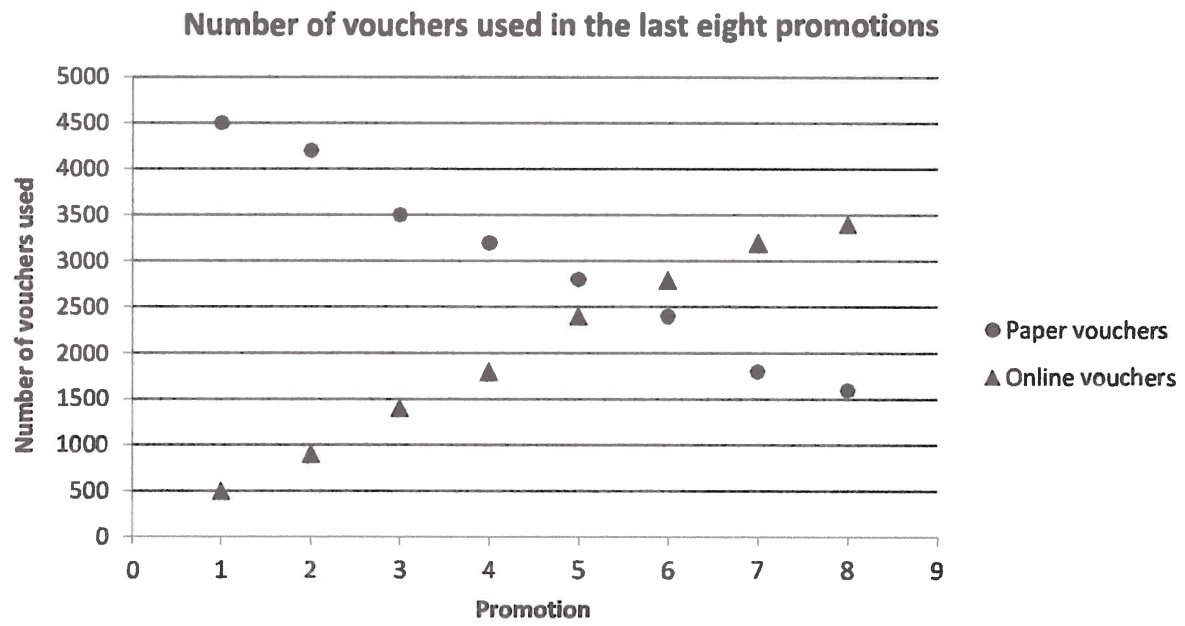


Spare graph paper for 2C





Spare graph for 2H





Spare answer box for 2J

Draw you tree diagram here





Extra space for working and answers

