

## Functional Skills Mathematics Level 2 sample assessment

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Sample paper 1 (For remodelled papers)

*Draft worked example  
for assessment  
from September 2015*

Candidate Name (First, Middle, Last)

EXAMPLE 3

Candidate enrolment number

DOB (DDMMYYYY)

Candidate signature

Assessment date (DDMMYYYY)

Centre number

Total marks	
Task	Mark
Total	

**Length of assessment: 2 hours**

**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
- graph paper
- a calculator
- a protractor.
  
- You may use a dictionary.



### General instructions

- There are **3** 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.
- Show your working out. You may get marks for it.
- Check your calculations.
- Remember to put units on your answers.
- Write all working out and answers in this booklet.

## Task 1 Cycle hire

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



### Introduction

This task is about a cycling holiday.

You need to hire suitable cycles and child seating for **four** adults and **two** children for 7 days.






One of the children is  $3\frac{1}{2}$  years old and weighs 3 stone.

The other is 18 months old and weighs 25 pounds.

You need to investigate how much it will cost.

**Children under 4 years old must be seated in a child seat or a trailer. Cycle hire centres need to know the ages and weights of children under 4 years old.**

**1 stone = 14 pounds**  
**1 kilogram = 2.2 pounds**

Bert's Bikes Cycle hire pricelist			
Type of cycle and child seating		Suitable for	Hire cost per day
Tandem		<b>2 adults not suitable for child seats or trailers</b>	£22.50
Adult cycle		<b>1 adult</b>	£14.50
Child cycle		<b>4 – 12 years old</b>	£6.00
Child seat		<b>a child up to a weight of 18kg</b>	Free
Trailer		<b>1 or 2 children up to a total weight of 35kg</b>	£17.50
<b>Children under 4 years old must sit in a child seat or a trailer</b>			

Go Bike Cycle hire pricelist		
Hire cost list		
Type of cycle and child seating	Per day	Per week (7 days)
Tandem (not suitable for child seats or trailers)	£26.50	£175
Adult cycle	£15	£70 per week
Adult cycle Special Hire Offer	2 Adult cycles for £20 per day or £90 per week	
Child cycle 4 - 12 years old	£8.50	£50
Children under 4 years old must sit in a child seat or a trailer		
Child seat for a child up to a weight of 18kg	Free	
Trailer for 1 or 2 children up to a weight of 35kg	£15 per day	£99 per week

**1A**

You need to decide from which centre to hire suitable cycles and child seating for the **four** adults and **two** children for 7 days.

Plan how to solve this task. Write down your plan, including the steps you will use.

*Decide which centre to hire suitable  
cycles and child seating for 4 adults  
and 2 children for 7 days*

(3 marks)

1B

Carry out your plan to investigate the costs.

Show your working. You should check your work as you go along. Write down one of your calculation checks.

$$4 \text{ bikes} \times 14.50 = \cancel{58}$$

$$1 \text{ child cycle} = 6$$

$$\text{child seat} = \text{free}$$

$$\frac{64 \times 7}{\phantom{64 \times 7}} = 448$$

$$4 \text{ bikes } \cancel{70}$$

$$\text{child cycle } 8.50$$

$$\text{child seat } \frac{\text{FREE}}{78.50} \times 7 = 549.50$$

Bert's bikes is cheapest

Check

$$64 \times 7 = 448$$

(11 marks + 2 check marks)

1C

Draw a table to present your results and compare the costs of hiring what you need from Bert's Bikes with the cost of hiring from Go Bike.

	Bikes	Child cycle	Total
Bert's	58	6	448
Go	70	8.50	549.50

(4 marks)

1D

Decide which centre you will hire from.

Give **two** reasons for your choices of centre and of cycles and child seating.

Centre Bert's bikes

Reason for centre  
Cheapest

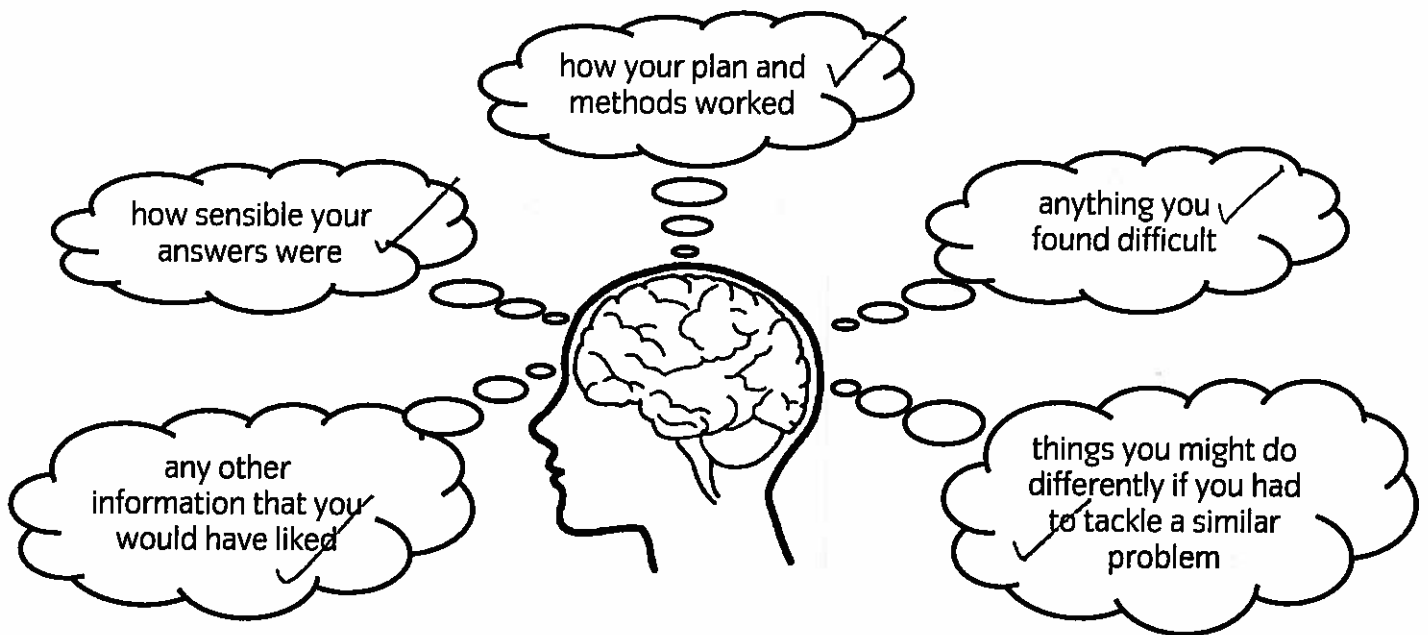
Reason for cycles and child seating  
Need bikes for 4 adults and 1 child

(2 marks)

### 1E Reviewing your work

You need to review how well you did the task.

#### Think about...



Explain **three** of the most important points.

*It was difficult*

*I would get different prices*

*I would want more bike shop prices*

*My answer is sensible because it is the cheapest*

*I found out how much it would cost which was my plan*

(3 marks)

## Task 2 Landscape garden

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



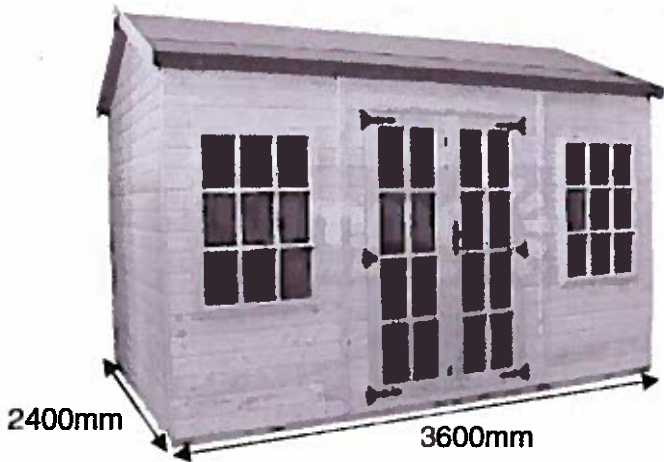
### Introduction

This task is about planning a garden with a summerhouse.

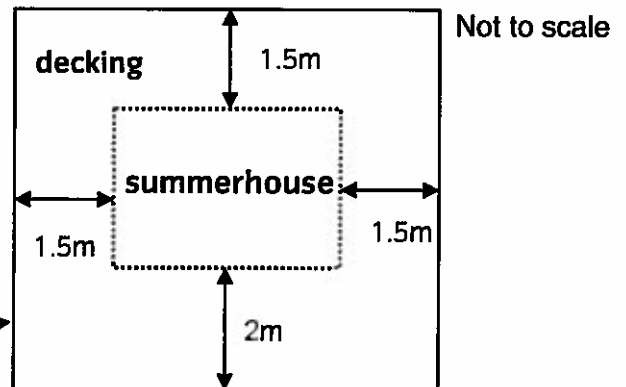
You work for a landscape company.

A customer wants a summerhouse, some decking and a lawn.

summerhouse



Sketch plan to show the position of the summerhouse on top of the decking



decking



### 2A

What are the dimensions of the decking?

Show your working.

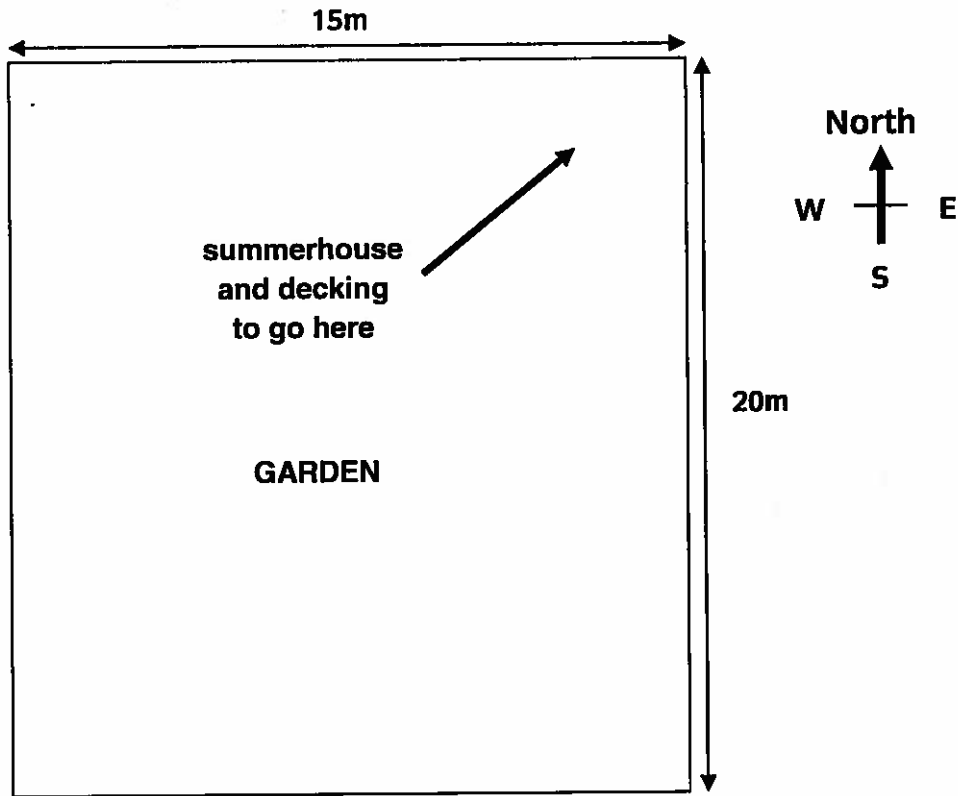
Length 3600 mm  
Width 2400 mm

(4 marks)

**2B**

The customer wants the decking and summerhouse to be in the top right hand corner of the garden. The doors must face south.

You have a sketch of the customer's garden.



Draw a scale plan to show the outline of the customer's garden.  
Add the decking and summerhouse to scale on your plan.

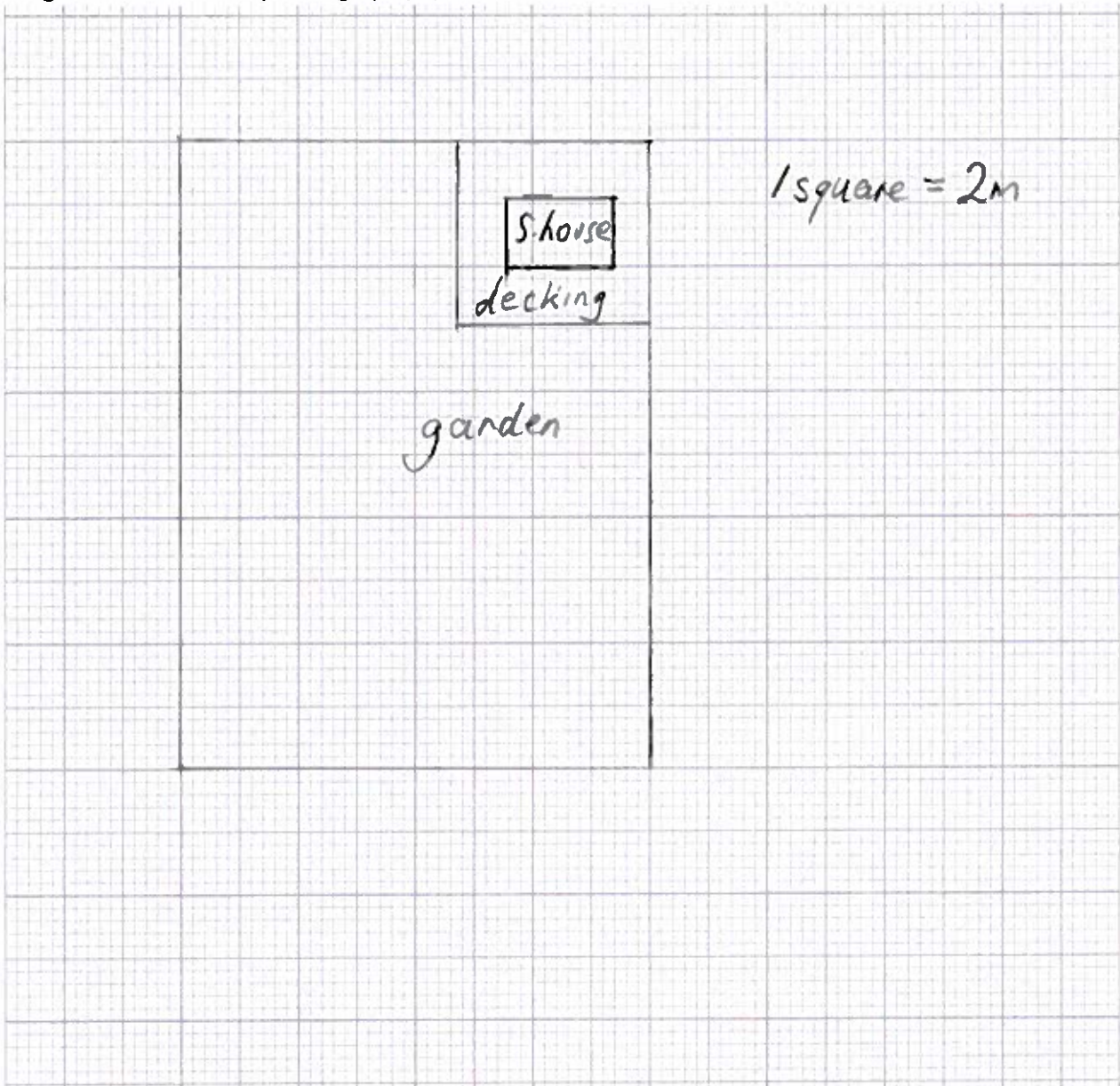
Use a suitable scale.  
Label your diagram.

**Use the graph paper on the page opposite.**

**(10 marks)**



(Original used is 2mm squared graph paper)



**2C**

You need to show a check of how you used the scale in **2B**.

Explain how you know one of the lines on your diagram is the correct scaled length.

Write your check here.

$$10 \text{ cm} = 20 \text{ m}$$

checked with ruler

**(2 marks)**

2D

The customer wants the rest of the garden to be a new lawn. You need to buy enough grass seed.

Formula for working out grass seed

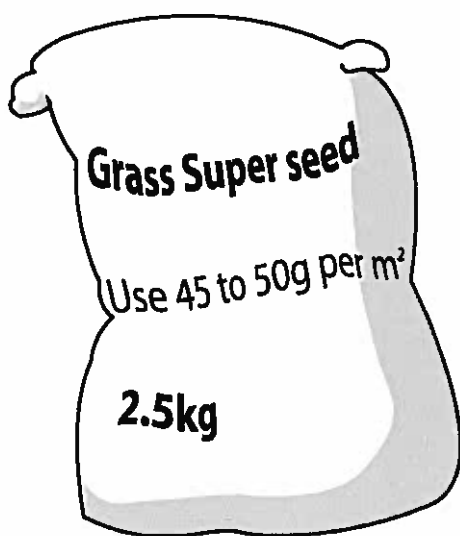
$$W = \frac{r \times A}{1000}$$

Where

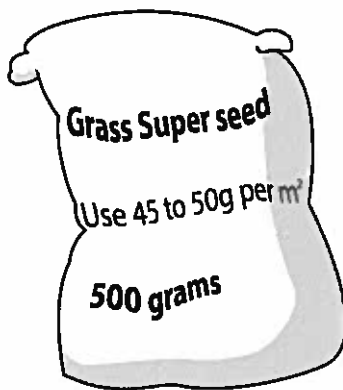
W = weight of grass seed needed (in kilograms)

r = amount of seed to use (in grams per square metre)

A = area of new lawn (in square metres)



£14.99



£8.75



£4.75

Work out the **cheapest** way to buy the grass seed you need and its total cost.

Show your working.

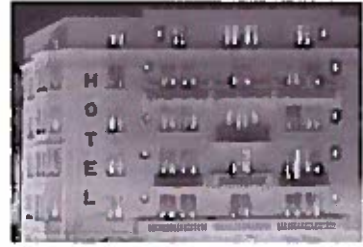
$$W = 47.5 \times 80 = 3800$$

$$3800 \div 12.5 = 304$$

$$304 \times 14.99 = \pounds 4556.96$$

(9 marks)

### Task 3 Hotel review



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

#### Introduction

This task is about comparing the performance of two hotels, Blues Hotel and Giltspur.

Every month the owner reviews how well the hotels are doing.

#### 3A

Both hotels send information from customer surveys.

Here is an example of a customer survey.




**The Blues Hotel**  
*Hitting all the right notes*

Customer Survey

Thank you for choosing to stay with us. We hope you enjoyed your stay.  
Before you leave please complete this survey form.  
All completed forms go into our free prize draw for Blues Hotel customers.

Name: Bradley Handbury      Contact: bradh@hundred.co.uk

Please rate our:

	Very Poor	Poor	Satisfactory	Good	Very Good
SERVICES	1	2	3	4	5
	Very Poor	Poor	Satisfactory	Good	Very Good
STAFF	1	2	3	4	5
	Very Poor	Poor	Satisfactory	Good	Very Good
CLEANLINESS	1	2	3	4	5

Thank you for your time – Good luck in the prize draw!

Survey reference: Number 17

Every month there is a prize draw for customers who complete the survey. One customer will win the prize. Last month, 20 customers completed the survey.

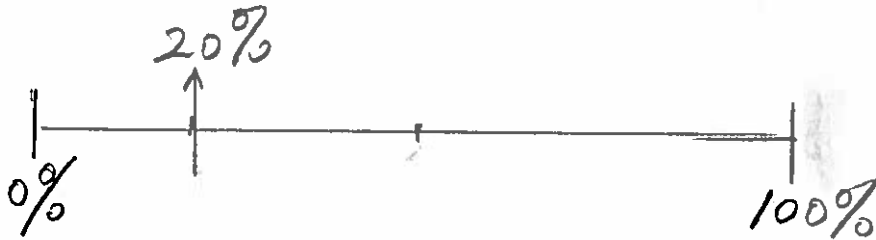
What chance does the customer, Bradley Handbury, have of winning the prize for last month's Blues Hotel survey?

Draw a probability scale to show your answer.

Show your working.

Probability 20%

Draw your probability scale below



(4 marks)

**3B**

This table shows the results for the Blues Hotel last month.

Survey results from the Blues Hotel last month																				
		Ratings 5 = Very Good   4 = Good   3 = Satisfactory   2 = Poor   1 = Very Poor																		
Survey number \ Category rated	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Service	5	2	1	5	5	5	5	4	4	3	2	4	4	3	2	3	3	4	4	4
Staff	1	5	5	5	4	3	2	3	3	5	2	3	4	3	3	3	4	2	3	5
Cleanliness	4	2	1	4	5	2	1	4	4	1	4	2	2	4	4	4	5	4	1	4

Work out the ranges of the ratings for each category.

Explain what your ranges show.

Show your working.

$5 - 4 = 1$   
 $5 - 1 = 4$   
 $4 - 4$

Ranges for

Service 2-5

Staff 1-5

Cleanliness 1-5

Explanation

Staff is better than service

(4 marks)

**3C**

Choose one of your calculations in **3B** to show a check.  
 Check it by a **different** method to the one you used originally.

Write your check here.

$1 + 4 = 5$

(2 marks)

**3D**

Work out a **suitable** average for the ratings for Service and for Staff at the Blues Hotel last month. Explain why the average you used is the most suitable.

<b>Tick the average you will use</b>	Mean <input type="checkbox"/>	Median <input checked="" type="checkbox"/>	Mode <input type="checkbox"/>
Show your working.			
$(3+2) \div 2$			
$(5+2) \div 2$			
Explanation for your choice of average			
best average			
	Service	2.5	
	Staff	3.5	

(5 marks)

**3E**

Work out the percentage of customers who rated the Blues Hotel as Good or Very Good for Cleanliness last month.

Show your working.	
10 good	$12 \times 100$
2 very good	
<hr/> 12	
	<hr/> 120%

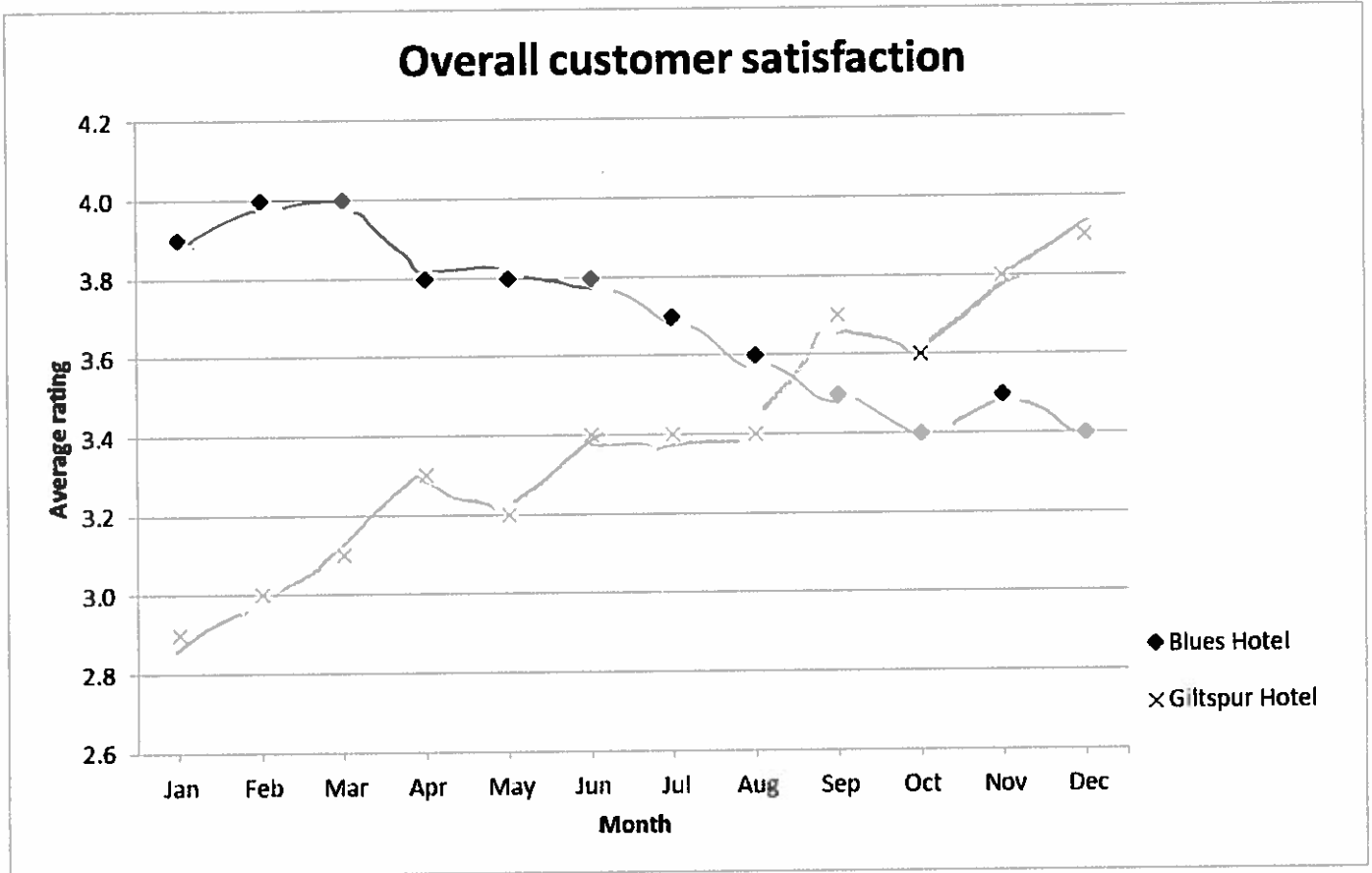
(3 marks)

3F

The owner also wants to know if the performance of the hotels is improving.

You use all the results for the year to find the overall customer satisfaction for each month.

This chart summarises your results.



Draw **two** trend lines (lines of best fit) on the graph, one for each hotel.

What do the trend lines tell you? Make one comment about each hotel.

Blues Hotel comment

Went down to 3.4

Giltspur Hotel comment

Went up to 3.9

(4 marks)



**3G**

The owner says that the Giltspur Hotel is performing much better than the Blues Hotel.

**Summary of survey results from the Giltspur Hotel for last month**

<b>The Giltspur Hotel</b>	
On average our customers rate us as:	
<ul style="list-style-type: none"><li>• Service - <b>Good</b></li><li>• Staff - <b>Good</b></li></ul>	
75% of our customers rate the hotel as <b>Good</b> or <b>Very Good</b> for Cleanliness.	

Compare the results for the Blues Hotel survey with the Giltspur Hotel survey to decide if the owner is correct.

Make **three** comments to support your decision.

Is the owner correct?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Comments	<p><i>Giltspur service is good</i></p> <p><i>Giltspur cleanliness is good</i></p> <p><i>Staff are good</i></p>	

(3 marks)

**End of assessment**

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