

Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use	
Examiner's Initials	
Question	Mark
1	
2	
3	
4	
TOTAL	



Functional Skills Certificate

# Functional Mathematics

XXXX/1

Level 1

Specimen Paper

<p><b>For this paper you must have:</b></p> <ul style="list-style-type: none"> <li>mathematical instruments.</li> <li>A copy of the data book (examination) (enclosed)</li> </ul> <p>You may use a calculator.</p>	
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### Time allowed

- 1 hour 30 minutes

### Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the space provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work that you do not want to be marked.
- State the units of your answer where appropriate.

### Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 60.
- You may ask for more answer paper, graph paper and tracing paper. These must be tagged securely to this answer booklet.
- You are expected to use a calculator where appropriate.
- Evidence of checking is specifically assessed in 1(a), 2(b), 3(b), 3(c), 4(a). These questions are indicated with a †.

### Advice

- In all calculations, show clearly how you work out your answer.

**There are no questions printed on this page**

**DO NOT WRITE ON THIS PAGE  
ANSWER IN THE SPACES PROVIDED**

Draft



1 (b) When school groups go to Lakeside there **must** be at least one adult for every 12 pupils.

Ranvir receives this e-mail from Tanfield School about a summer trip to Lakeside.

Dear Ranvir

Here are our plans for a trip to Lakeside.

Number of pupils	60
Accommodation	2 nights
Arrival	Monday 2nd July
Departure	Wednesday 4th July

We would like **all** pupils and adults to do

- a half day activity on Monday
- a full day activity on Tuesday
- a half day activity on Wednesday.

Please let me know the number of adults that **must** come with the pupils.

Could you please let me know the total cost for the trip?

Yours sincerely

Dev Patel

Trip Organiser

Tanfield School

1 (b) (i) Ranvir works out the accommodation costs using this form.

<b>Lakeside Centre</b>	
<b>Numbers</b>	
Adults	.....
Pupils	..... 60 .....
<b>Accommodation costs</b>	
Adults	£ .....
Pupils	£ .....

Complete Ranvir's form.

Show any working that you do to help you complete the form.

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(4 marks)

1 (b) (ii) Ranvir works out the activity costs using this form.

<b>Lakeside Centre</b>	
<b>Activity Costs</b>	
Full day	£ .....
Half day	£ .....

Complete Ranvir's form.

Show any working that you do to help you complete the form.

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(2 marks)

Question 1 continues on the next page

Turn over ►

**1 (b)(iii)** Lakeside offers a 10% discount on the total cost when the number of pupils is greater than 50.

Work out the total cost of Tanfield School's trip.

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(4 marks)

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**2 Car Journeys**

You will need to use the **Data Sheet for Car Journeys** to answer this question.

Emma and Alfie live in the same street in Liverpool.

They both teach at the same school in Manchester.

Emma's car is a Hyundai Santa Fe.

Alfie's car is a Smart Coupé.

**2 (a)** Emma and Alfie travel to and from school in their own cars.

They each travel a total of 140 kilometres each day.

Work out the **total** amount of CO<sub>2</sub> emissions created each day by **both** Emma's car and Alfie's car on their journeys to and from school.

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(4 marks)

**Question 2 continues on the next page**




2 (c)

We will not be able to share the driving next week.  
I have to stay late to help with the school play.  
Most nights I will not be leaving until about 7 pm.



Alfie

Emma



Well, at least your journey home will be quicker than mine.

Here are the times in minutes it takes Alfie and Emma to travel home from school during the week that Alfie has to stay late.

Alfie				
46	48	44	49	46

Emma				
56	52	53	50	50

2 (c) (i) Work out Alfie's and Emma's average journey times home during the week.

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Alfie's average journey time .....

Emma's average journey time .....

(4 marks)

Question 2 continues on the next page

**2 (c) (ii)** Comment on Emma's statement about quicker journey times.

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(2 marks)

Draft

**3 Body-Mass Index (BMI) and Health**

You will need to use the **Data Sheet for Body-Mass Index (BMI) and Health** to answer this question.

- 3 (a)** Zoe's dad is 1.80 metres tall and weighs 86 kilograms.



Is Zoe correct?

You **must** show working to justify your answer.

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(4 marks)

**Question 3 continues on the next page**



3 (c) † Zoe reads this advice in a Healthy Eating magazine.

Stay healthy.

Eat a total of **35 portions** of fruit and vegetables a week.

Zoe



Dad, I think you should follow this advice.

I'll keep a record of the portions you eat each day.

On Saturday Zoe's dad eats 7 portions.

On Sunday he eats 4 portions.

By the end of the week he eats 35 portions.

Complete the table to show the number of portions of fruit and vegetables that Zoe's dad might eat on each day of the week.

Sat	Sun	Mon	Tue	Wed	Thu	Fri

Show working to check your total.

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(3 marks)

Turn over for the next question

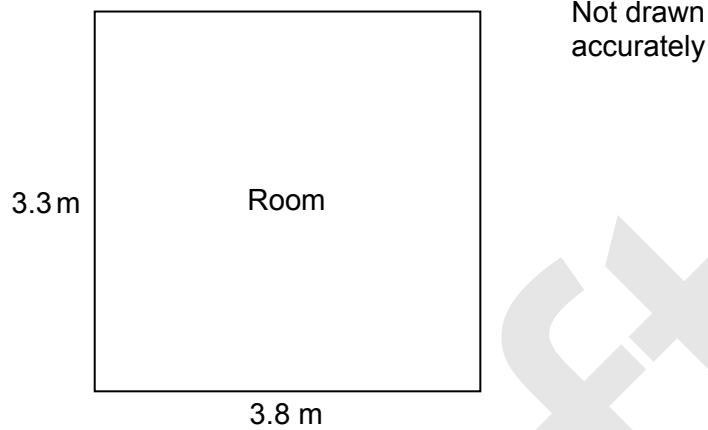
Turn over ►

FMC/L1

**4 Carpets**

You will need to use the **Data Sheet for Buying Carpets Online** to answer this question.

- 4 (a) †** Faye wants to buy a new carpet for her room.  
The room measures 3.8 metres by 3.3 metres.



She decides to buy carpets from *Carpets Online*.

She has £200 to spend

She wants to buy Essential carpet

Can she afford this?

You **must** show your working.

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(5 marks)

4 (b) *Carpets Online* says that the cost of underlay and gripper rods for the room is £43.50

Check that this cost is accurate.

Handwriting practice area consisting of 20 horizontal dotted lines. A large, light grey watermark reading "Draft" is oriented diagonally across the page.

(9 marks)

**END OF QUESTIONS**

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ANSWER IN THE SPACES PROVIDED**

Functional Skills Certificate



**XXXX/1**

**MATHEMATICS**  
**Functional Mathematics Level 1**  
**Data Book (Examination)**

# Insert

## Instructions

- This copy of the Data Book is for use in the examination. It should not be given to candidates in advance.

## Advice

- This book will not be collected in for marking. Ensure that all working that you wish to have marked is written in the space provided in the question/answer book.

## Data Sheet for Lakeside Activity Centre

Here is a leaflet about Lakeside Activity Centre.

### Lakeside Activity Centre

Lakeside is an activity holiday centre.  
It is suitable for family or group holidays.

#### Price list for 2009

**Accommodation** Prices are for one person to stay for one night.

	Spring	Summer	Autumn
<b>Adult</b>	£ 40	£ 38	£ 33
<b>Child</b>	£ 35	£ 31	£ 27

**Activities** Prices are for one person.

	Spring	Summer	Autumn
<b>Full day</b>	£ 28	£ 26	£ 23
<b>Half day</b>	£ 18	£ 16	£ 13

E-mail [ranvir@lakeside.co.uk](mailto:ranvir@lakeside.co.uk) for bookings, more details on cost or any other help you need in planning your trip.

## Data Sheet for Car Journeys

A car's engine creates carbon dioxide (CO<sub>2</sub>).

The amount of CO<sub>2</sub> that the engine creates is called its CO<sub>2</sub> emissions.

A car's CO<sub>2</sub> emissions are measured in grams for each kilometre travelled (g/km).

The table shows the CO<sub>2</sub> emissions for some cars.

Name of car	CO <sub>2</sub> emissions (g/km)
Smart Coupé	88
Honda Insight	101
Volkswagen Passat Bluemotion	128
Hyundai Santa Fe	191

### Example

A Volkswagen Passat Bluemotion goes on a 400 km journey.

Work out the amount of CO<sub>2</sub> created in grams.

$$\text{CO}_2 \text{ emissions} = 128 \text{ g/km}$$

$$\text{Amount of CO}_2 = 128 \times 400$$

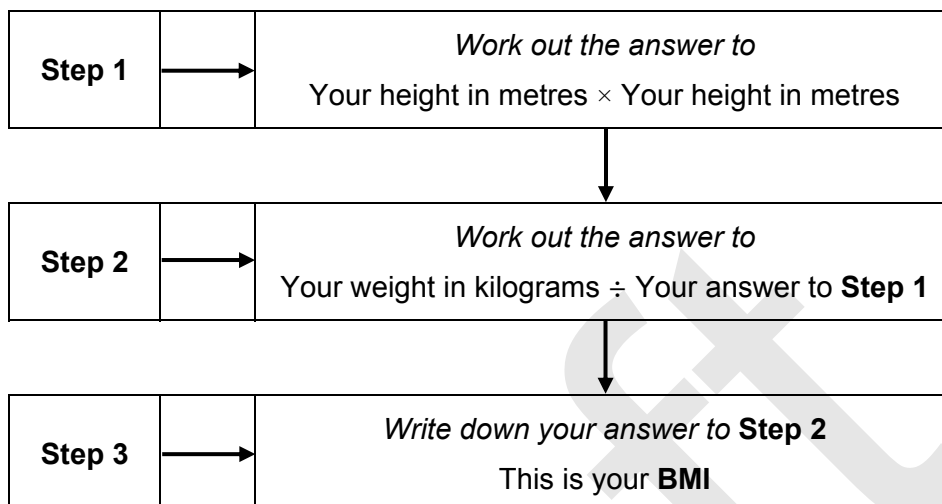
$$= 51\,200 \text{ grams}$$

The amount of CO<sub>2</sub> created on this car journey is 51 200 grams.

## Data Sheet for Body Mass Index (BMI) and Health

The healthy weight range used by doctors is based on the body mass index (BMI).

This is how you work out your BMI.



This table shows the different ranges of BMI for adults.

<b>BMI</b>	
Less than 20	Underweight
20 to 25	Healthy
25 to 30	Overweight
Over 30	Obese

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## Data Sheet for Buying Carpets Online

Carpet is sold from 4-metre wide rolls.

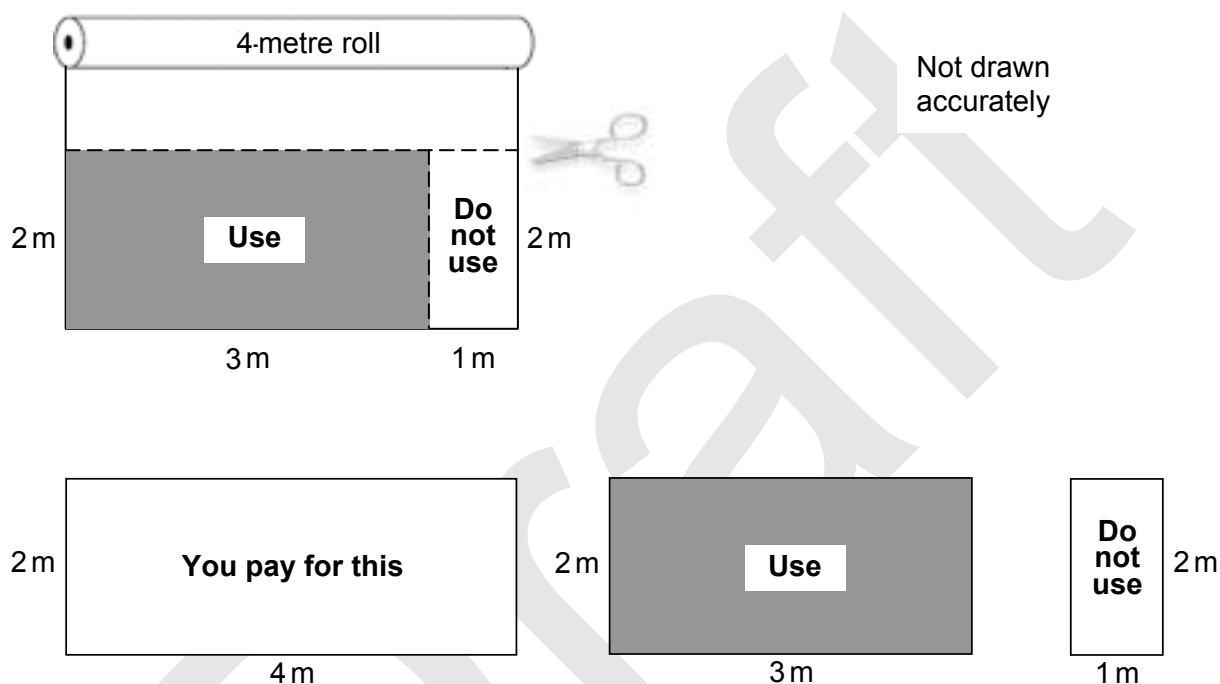
The cost of a carpet is worked out from the number of square metres that you buy.

Often, when you buy a carpet, you **do not use** all the carpet you pay for.

### Example

You want to buy a carpet for a rectangular room measuring 3 metres by 2 metres.

To do this cut a 2 metre length from the roll, as shown.



You **pay** for a 4 metre by 2 metre rectangle of carpet.

You **use** a 3 metre by 2 metre rectangle of carpet.

You **do not use** a 2 metre by 1 metre rectangle of carpet.

A company called *Carpets Online* sells these carpets, underlay and gripper rods.

### **Carpets**

<b>Carpet</b>	<b>Cost</b>
High Point Twist	£ 7.99 per m <sup>2</sup>
Rough Twist	£ 10.99 per m <sup>2</sup>
California Dream	£ 12.99 per m <sup>2</sup>
Essentials	£ 14.99 per m <sup>2</sup>

### **Underlay**

Underlay is a layer of padding under a carpet.  
It can be cut and joined to fit any area.

<b>Full roll</b>
11 m long by 1.37 m wide
Covers 15 square metres
£ 25.49

### **Gripper rods**

Gripper rods are fixed round the edge of a room to hold a carpet in position.  
They can be cut to make shorter lengths.  
They can be joined to make longer lengths.

<b>Pack of 6</b>	<b>Pack of 20</b>
£ 8.99	£ 19.99
Each gripper rod is 1.5 metres long	

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