



Please write clearly in block capitals.

Centre number

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Candidate number

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Surname

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Forename(s)

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Candidate signature

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# Functional Skills Certificate

## FUNCTIONAL MATHEMATICS

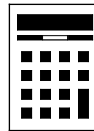
Level 2

Wednesday 17 May 2017      Morning      Time allowed: 1 hour 30 minutes

### Materials

For this paper you must have:

- a calculator
- mathematical instruments
- a copy of the Data Book (Examination) (enclosed).



### Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Answer **all** questions.
- You must answer the questions in the spaces 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 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 book.
- Evidence of checking is specifically assessed in Questions 1(c) and 4(d). These questions are indicated with a †.

### Advice

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

For Examiner's Use	
Question	Mark
1	
2	
3	
4	
<b>TOTAL</b>	



J U N 1 7 4 3 6 8 0 1

IB/M/Jun17/E9

4368

QAN 500/8702/2

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Answer **all** questions in the spaces provided.

**1 Hot Air Balloon**

There is a **data sheet** for Hot Air Balloon.



**Jo**

Jo is a private balloon pilot.

She wants to qualify to carry passengers.

**1 (a)** Jo has already completed seven flights.

These flights lasted a total of 26 hours.

She completes three more flights.

	<b>Day</b>	<b>Start time</b>	<b>Finish time</b>
<b>Flight 1</b>	Monday	8.00 am	11.30 am
<b>Flight 2</b>	Friday	10.45 am	1.00 pm
<b>Flight 3</b>	Saturday	2.40 pm	6.00 pm

Jo says,

“I have now completed the hours I need to qualify.”

Is Jo correct?

You **must** show your working.

**[4 marks]**

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**1 (b)** On one of the flights, the balloon reaches a height of 1546.5 metres.

Circle the height that the balloon reaches in **feet**.

**[1 mark]**

463.95

515.5

5103.45

5155

**†1 (c)** Jo rents a balloon with an envelope volume of  $3198 \text{ m}^3$   
A balloon can lift 1 kilogram for every  $3.9 \text{ m}^3$  of envelope volume.

Work out the maximum number of kilograms this balloon can lift.

**[2 marks]**

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Check your answer by rounding

3198 to the nearest 100

and

3.9 to the nearest whole number.

**[1 mark]**

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2

**Muesli**

I eat muesli for breakfast.

**Rory**

Rory finds the number of calories in different brands of muesli.

<b>Muesli</b>	<b>Calories per serving</b>
Brand W	222
Brand X	170
Brand Y	219
Brand Z	188

He also finds this information.

	<b>Calories</b>
One serving of yoghurt	50
Glass of apple juice	86
Glass of cranberry juice	48
Cup of coffee	25
Cup of tea	10











**3 Canteen Survey**

Betty is the manager of the college canteen.



**Betty**

I want to improve the service we offer.  
To help me I will carry out a survey.

100 students completed Betty's survey form.

Here is one of the completed forms.

**Canteen Survey**

**A** Circle the number of days that you used the canteen last week.

0

1

2

3

4

5

**B** Tick a box to show which of these sandwiches you like best.

Cheese and Pickle	<input type="checkbox"/>
Egg and Cress	<input checked="" type="checkbox"/>
Bacon, Lettuce and Tomato	<input type="checkbox"/>
Chicken Salad	<input type="checkbox"/>
Tuna and Sweetcorn	<input type="checkbox"/>

**C** The canteen is thinking of selling sushi.

Tick a box to show what type of sushi you would like best.

Salmon	<input type="checkbox"/>
Prawn	<input type="checkbox"/>
Tuna	<input checked="" type="checkbox"/>
Vegetable	<input type="checkbox"/>
None	<input type="checkbox"/>



- 3 (a)** The mean number of days the 100 students used the canteen that week was 1.7  
Betty put some more seats in the canteen.  
She then asked the same 100 students question **A** again.  
Here is some information about their answers.

Number of days	Number of students
0	16
1	14
2	11
3	44
4	13
5	2
Total = 100	

Betty says,

“The mean number of days the students used the canteen has increased.”

Is she correct?

You **must** show your working.

**[4 marks]**

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The table shows information about the answers to question **B**.  
It also shows the price of each type of sandwich.

Sandwich	Number of students	Price
Cheese and Pickle	8	£1.40
Egg and Cress	10	£1.60
Bacon, Lettuce and Tomato	32	£3.00
Chicken Salad	38	£2.00
Tuna and Sweetcorn	12	£3.00
Total = 100		

Betty usually makes 15 of each type of sandwich each day.

**3 (b)** Betty decides to double the **total** number of sandwiches she makes.

Show that she will now make 150 sandwiches each day.

[1 mark]

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3 (d) Here is some information about the answers to question C.

Type of sushi	Tally
Salmon	
Prawn	
Tuna	
Vegetable	
None	

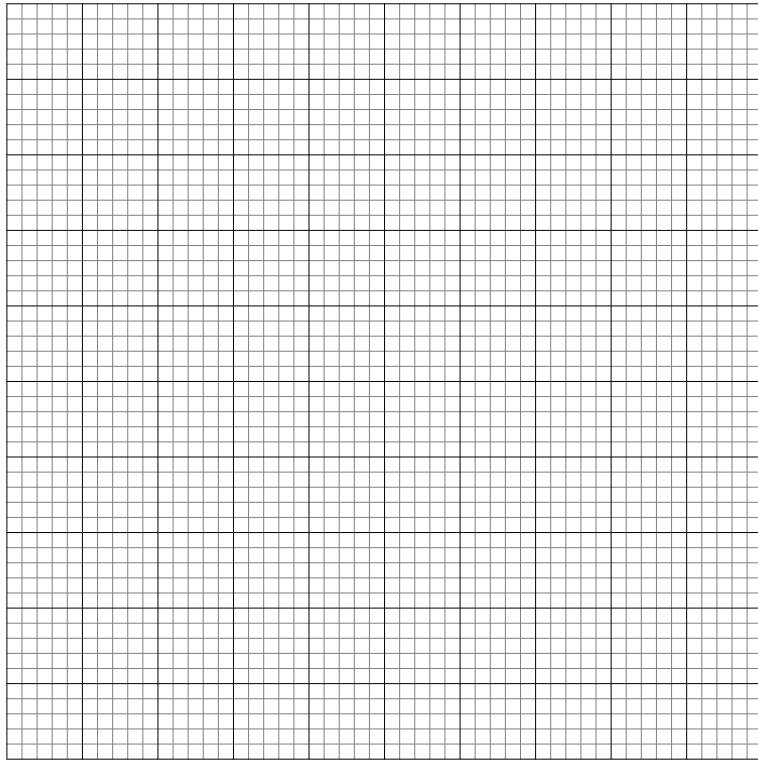
Betty wants to show this information in a diagram.

Draw an appropriate diagram that Betty could use.

Use the space below **or** the grid opposite.

**[4 marks]**





15

Turn over for the next question

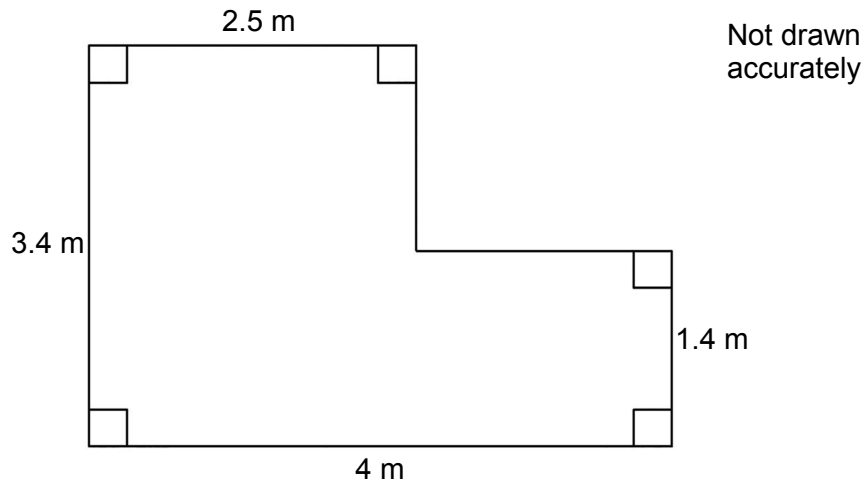


Turn over ►

**4 Room Makeover**

There is a **data sheet** for Room Makeover.

Here is a sketch of Tom's bedroom floor.



**4 (a)** Show that the floor area of this bedroom is  $10.6 \text{ m}^2$

**[2 marks]**

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**4 (b)** The bedroom has height 2.4 m  
Tom wants a new **double** radiator.

Work out the smallest length of radiator he should buy.

You **must** show your working.

**[3 marks]**

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- †4 (d) Tom hires Ali to lay the floor.  
Ali charges £18 per hour.  
He works for  $7\frac{3}{4}$  hours.

How much does he charge Tom for  $7\frac{3}{4}$  hours work?

[2 marks]

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Check your answer.  
Show how you have done your check.

[1 mark]

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15

END OF QUESTIONS



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