

Please write clearly in block capitals.

Centre number

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Candidate number

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Surname

Forename(s)

Candidate signature

Functional Skills Certificate

FUNCTIONAL MATHEMATICS

Level 1

Monday 11 January 2016

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.
- Fill in the boxes at the top of this page.
- 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 2(c). These questions are indicated with a †.

Advice

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



Answer **all** questions in the spaces provided

1 Vending machine

There is a **data sheet** for Vending machine.

1 (a) You press **D 2**

What are you buying?

[1 mark]

1 (b) Write down the buttons you should press to buy lemonade.

[1 mark]

1 (c) You pay the correct amount for lemonade using **five** coins.

What could the coins be?

[2 marks]

Check your answer.

Show how you have done your check.

[1 mark]



1 (d) If you want to buy more than one item, you must pay for them one at a time.

You have these coins.



Can you buy a raspberry muesli bar **and** a cola using the exact money?
You **must** show your working.

[3 marks]

Turn over for the next question



The vending machine is in Laura's shop.

- 1 (e)** Laura decides to replace one of the muesli bars with a chocolate flapjack.
The table shows muesli bar sales last week.

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Strawberry	21	13	11	13	18	18	32
Raspberry	19	14	10	13	19	17	27

Compare the sales of the two muesli bars.

Which one should she replace?
You **must** show your working.

[3 marks]



1 (f) One week Laura takes a total of £870 from the machine.

She spends

- half of the money on snacks and drinks to fill the machine
- £80 to hire the machine.

She keeps the rest of the money.

Laura says,

“I keep over £350”

Is she correct?

You **must** show your working.

[4 marks]

15

Turn over for the next question



2

Food



I am making some food.

Nadia

2 (a)

Nadia follows these instructions for cooking a turkey.

Cook for 30 minutes at 220°C
Then cook for 50 minutes per kilogram at 170°C
After the turkey is cooked leave for 15 minutes before serving.

Nadia is cooking a 3 kg turkey.

She wants to serve it at 4.00 pm

She says,

“I need to start cooking the turkey at 1 pm”

Is she correct?

You **must** show your working.

[5 marks]



2 (b) To make ice cream for 6 people you need

4 eggs
100 g of sugar
300 ml of cream
300 ml of milk
1 vanilla pod

Nadia wants to make ice cream for 12 people.
She already has

10 eggs
125 g of sugar
450 ml of cream
600 ml of milk
3 vanilla pods

What does she need to buy?
Include the amounts that she needs to buy.

[4 marks]



Nadia has made a cake.

- †2 (c)** Nadia is going to cover the top of the cake with icing.
The top of the cake is a rectangle with length 20 cm and width 15 cm

Nadia knows Area of a rectangle = Length \times Width



Not drawn
accurately

15 cm

20 cm

Nadia has enough icing to cover 340 cm^2

Is this enough to cover the top of the cake?

You **must** show your working.

[2 marks]

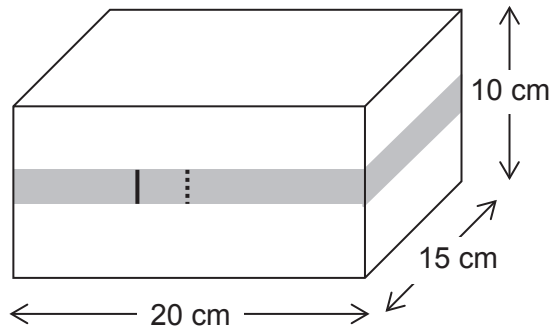
Check your answer.

Show how you have done your check.

[1 mark]



- 2 (d)** The cake is in the shape of a cuboid.
A ribbon is wrapped around the side of the cake.



There is a 2 cm overlap where the ribbon joins.

Work out the length of the ribbon.

[2 marks]

14

Turn over for the next question



Turn over ►

3

The Printing Shop

There is a **data sheet** for The Printing Shop.



I work out the charge for making booklets at The Printing Shop.

Sue

John wants some booklets.
He sends details in this email.

Publicity Department
The Advertising Agency

Dear Sue

Here are the details of the booklets I want.

45 booklets, each with
120 pages printed on both sides in black and white
a booklet cover
a binder.

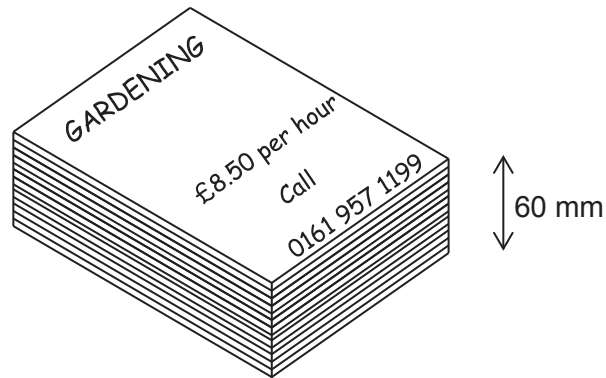
Is £475 enough?

Yours sincerely

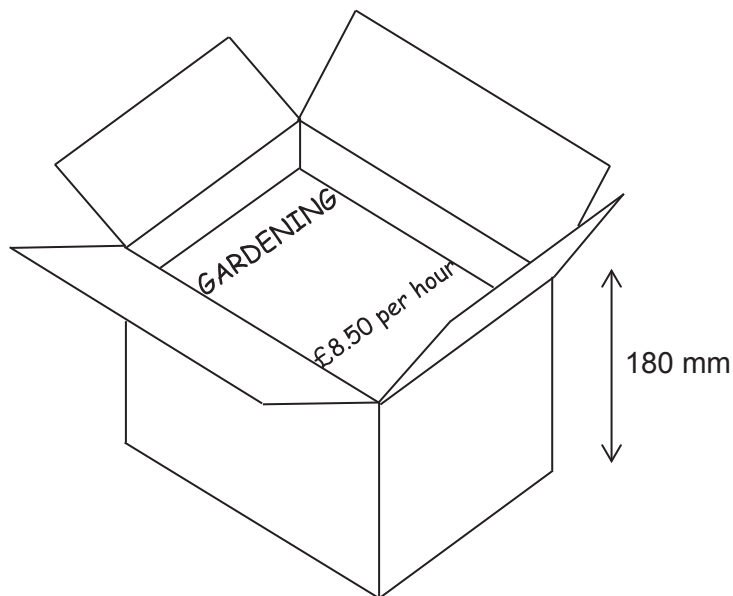
John



- 3 (c) A pile of 500 leaflets is 60 mm high.



Sue packs the leaflets into boxes.
Each box is 180 mm high.



Sue says,
"I can pack 6500 leaflets into 4 boxes."

Is she correct?
You **must** show your working.

[4 marks]



- 3 (d)** The Printing Shop gives a discount on printing charges for large numbers of leaflets.
The amount of discount depends on the number of pages printed.

Number of pages	Discount
1000 to 1999	5%
2000 to 4999	10%
5000 or more	15%

Joe wants 2300 leaflets.

He wants each leaflet to be

- one page
- printed on both sides in colour.

Will the total charge, after the discount, be less than £1000?
You **must** show your working.

[5 marks]

17

Turn over for the next question



4 Gritters

There is a **data sheet** for Gritters.

4 (a) Circle each temperature that means the gritters go out.

[2 marks]

4°C

-3°C

1°C

2°C

0°C

4 (b) Andy drives a gritter in the Coastal region.

He leaves the depot at 4.30 am



I will do **one** circuit and then return to the depot.

Andy

Andy drives at 30 miles per hour.

He says,

“I will be back at the depot by 6.30 am”

Is he correct?

You **must** show your working.

[4 marks]



4 (c) There are five gritter drivers.



Baz

Devi

Ed

Andy

Chun

Each night, there are three drivers at work.

Andy is at work on Sunday, Tuesday and Thursday.

Complete the rota so that

- each driver is at work for 3 nights
- no driver is at work for more than 2 nights in a row.

[3 marks]

Practise on this grid.

Sunday	Monday	Tuesday	Wednesday	Thursday

Put your answer on this grid.

Sunday	Monday	Tuesday	Wednesday	Thursday

Turn over for the next question



