

Please write clearly in block capitals.

Centre number

--	--	--	--	--

Candidate number

--	--	--	--

Surname

Forename(s)

Candidate signature

Functional Skills Certificate

FUNCTIONAL MATHEMATICS

Level 2

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.
- 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 2(a) and 4(b). 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 Gritters

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

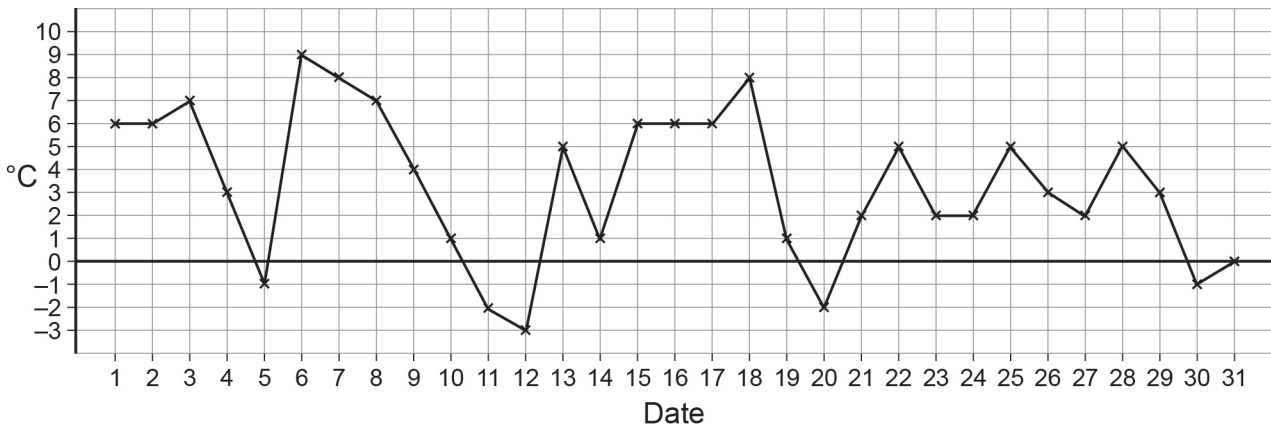


Joe

I drive a gritter for West Sussex Council.

1 (a) Joe looks at this graph.

Minimum temperature in West Sussex in January 2014



Joe says,

“The gritters went out on more than 20% of the days.”

Is he correct?

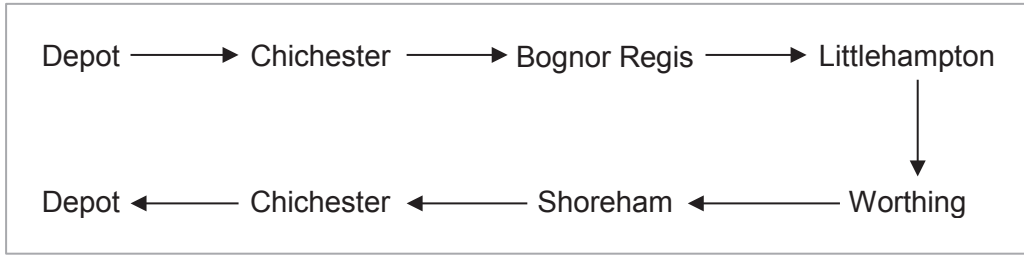
You **must** show your working.

[4 marks]



1 (b) Joe drives his gritter from the depot at 4.35 am

He drives



Joe drives at 50 kilometres per hour.

He says,

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

Is he correct?

You **must** show your working.

[5 marks]

Turn over for the next question



Turn over ►

West Sussex Council have 28 gritters.

This is only enough for $\frac{2}{5}$ of the roads in West Sussex.

- 1 (c)** Show that the council needs 42 **more** gritters for all the roads in West Sussex.

[2 marks]

- 1 (d)** The council looks at the cost of 42 new gritters.
The council would also have to pay to train 42 new drivers.

Each new gritter costs £81 000

To train each new driver costs £4000

Joe says,

“The council would have to spend over £3.5 million on new gritters and training.”

Is he correct?

You **must** show your working.

[4 marks]

15



2 Vending machine**Priya**

My company owns vending machines.

†2 (a) Priya says,

“Our machines in Manchester took £28 500 in the first 10 weeks of the year.”

Work out an estimate for the total amount of money taken by these machines in a year.

[2 marks]

Check your answer.

Show how you have done your check.

[1 mark]



One of the company's machines is in a gym.

The machine sells strawberry muesli bars and raspberry muesli bars.

2 (c) 560 **strawberry** muesli bars were sold during the last 20 weeks.

Work out the mean number sold per week.

Circle your answer.

[1 mark]

4

28

540

11200

2 (d) Priya wants to replace one of the muesli bars with an energy drink.

The table shows the number of **raspberry** muesli bars sold during the last 25 weeks.

Number sold	Number of weeks
27	9
28	7
29	5
30	4
Total	25

Priya decides to replace the muesli bar which has the lower average number sold per week.

Compare the sales of the two muesli bars.

Which muesli bar should she replace?

You **must** show your working.

[4 marks]



3

Food



I am making some food.

Nadia

3 (a)

Nadia uses this formula to work out the cooking time for a turkey.

$$T = 40m + 30$$

T is the cooking time, in minutes.

m is the weight of the turkey, in kilograms.

Nadia is cooking a 4.5 kg turkey.

After the turkey is cooked she will leave it for 20 minutes before serving.

She wants to serve the turkey at 1.30 pm

She says,

“I need to start cooking the turkey at 9.40 am”

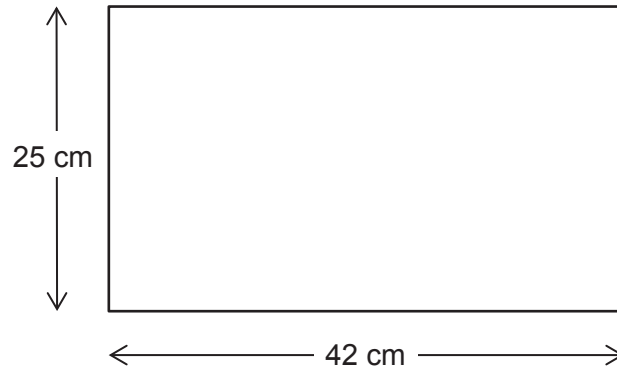
Is she correct?

You **must** show your working.

[5 marks]



- 3 (b)** Nadia is also cooking some Yorkshire puddings.
The top of each pudding is a circle of diameter 7.6 cm
She puts the puddings in rows on this rectangular tray.



Not drawn
accurately

Nadia says,

“I can fit 18 puddings on the tray.”

Is she correct?

You **must** show your working.

[5 marks]



3 (c) 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 9 people.
She already has

- 12 eggs
- 25 g of sugar
- 275 ml of cream
- 500 ml of milk
- 3 vanilla pods

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

[4 marks]

14



Turn over for the next question

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



Turn over ►

4

The Printing Shop

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

**Sue**

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

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.

90 booklets, each with 136 inside pages, a front and back cover and a binder.

Inside pages

printed on both sides in black and white
printed on Quality paper.

Front and back cover

printed on a single side in colour
printed on Luxury paper.

Will the total charge be less than £1000?

Yours sincerely

John



4 (a) Show that The Printing Shop uses binder C for the booklet.

[2 marks]

+4 (b) Work out the total charge for the binders for the 90 booklets.

[2 marks]

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

[1 mark]



Turn over ►

4 (d) Sue packs the booklets into boxes.

- Each booklet weighs 1.15 kg
- The booklets in each box cannot weigh more than a total of 10 kg

Work out the smallest number of boxes needed to pack the 90 booklets.

[4 marks]

17

END OF QUESTIONS



There are no questions printed on this page

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

Copyright Information

For confidentiality purposes, from the November 2015 examination series, acknowledgements of third party copyright material will be published in a separate booklet rather than including them on the examination paper or support materials. This booklet is published after each examination series and is available for free download from www.aqa.org.uk after the live examination series.

Permission to reproduce all copyright material has been applied for. In some cases, efforts to contact copyright-holders may have been unsuccessful and AQA will be happy to rectify any omissions of acknowledgements. If you have any queries please contact the Copyright Team, AQA, Stag Hill House, Guildford, GU2 7XJ.

Copyright © 2016 AQA and its licensors. All rights reserved.

