

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

Tuesday 27 February 2018

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).



For Examiner's Use

Question	Mark
1	
2	
3	
4	
TOTAL	

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(a). These questions are indicated with a †.

Advice

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



M A R 1 8 4 3 6 7 0 1

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

1

Coast to Coast

There is a **data sheet** for Coast to Coast.

Tim lives in London.

He is planning a cycling holiday.



Tim

I want to cycle the Coast to Coast route.

Tim makes these notes.

Monday	Travel by train from London to Whitehaven Overnight stay at Whitehaven
Tuesday	Start the Coast to Coast route Overnight stay
Wednesday	Cycle further along the route Overnight stay
Thursday	Finish the route Overnight stay in Tynemouth
Friday	Travel by train from Tynemouth to London



1 (a) Here are Tim's costs for his holiday.

Train from London to Whitehaven	£51.00
Overnight stays	£45.00 per stay
Other costs	£20.00 per day for 5 days
Train from Tynemouth to London	£54.50

Tim says,

"The total cost of my holiday will be **less than** £400"

Is he correct?

You **must** show your working.

[5 marks]

Question 1 continues on the next page

Turn over ►



Tim will

cycle **less than** 100 km on Tuesday

cycle **less than** 100 km on Wednesday

stay overnight at Stanhope on Wednesday night.

- 1 (b) In the table below, complete a possible plan for Tim for Tuesday and Wednesday.

[3 marks]

Day	Start	Finish	Distance cycled that day (km)
Tuesday	Whitehaven		
Wednesday		Stanhope	

- †1 (c) On Thursday, Tim will finish the route.

Work out the distance from Stanhope to Tynemouth.

[2 marks]

Check your answer.

Show how you have done your check.

[1 mark]



- 1 (d)** On Thursday, Tim wants to meet a friend in Newcastle at 11.00 am
He will cycle 25 km each hour.
He says,
“I should leave Stanhope by 9.00 am”

Is he correct?

You **must** show your working.

[4 marks]

Turn over for the next question

15

Turn over ►



2 Heating

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

- 2 (a)** Jack was born before 5 August 1953
In the 2017 qualifying week he was 72 years old.
He lived alone.

How much was his winter fuel payment?
Circle your answer.

[1 mark]

£100

£150

£200

£300

- 2 (b)** Ken and Tom lived together in 2017
Ken was born in 1932
Tom was born in 1951

How much did they **each** get for their winter fuel payment?

[3 marks]



2 (c) Ezra decides to insulate his loft.
He reads this advert.

Best Builders
We will insulate your loft for £450

Insulating his loft will save £140 per year in heating costs.

Ezra says,

“In 3 years I will save more than I pay Best Builders.”

Is he correct?

You **must** show your working.

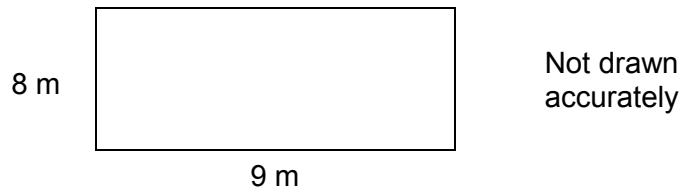
[3 marks]

Question 2 continues on the next page

Turn over ►



Here is a sketch of the rectangular loft in Prita's house.



Do not write
outside the
box

- 2 (d) Show that the area of the loft is 72 square metres.

[1 mark]

- 2 (e) The loft needs top layer insulation.

Top layer insulation £25 per roll
One roll covers an area of 6 square metres

Special offer

Pack of 4 rolls £79

Prita buys the rolls she needs.

How much does Prita save by using the special offer?

[5 marks]



3 Chocolate eggs

Carly makes and sells chocolate eggs in her shop.

- 3 (a)** To make the eggs, Carly has to heat the chocolate to 43 degrees Celsius. Her thermometer only measures in degrees Fahrenheit.

Use these steps to convert degrees Celsius to degrees Fahrenheit.

Step 1	Work out	temperature in degrees Celsius \times 9
Step 2	Work out	answer to Step 1 \div 5
Step 3	Work out	answer to Step 2 + 32

Convert 43 degrees Celsius to degrees Fahrenheit.

[4 marks]

- 3 (b)** On Tuesday, Carly makes these eggs.

	Milk chocolate	Dark chocolate
Small eggs	18	10
Large eggs	9	6

In total, how many **milk chocolate** eggs does she make on Tuesday?
Circle your answer.

[1 mark]

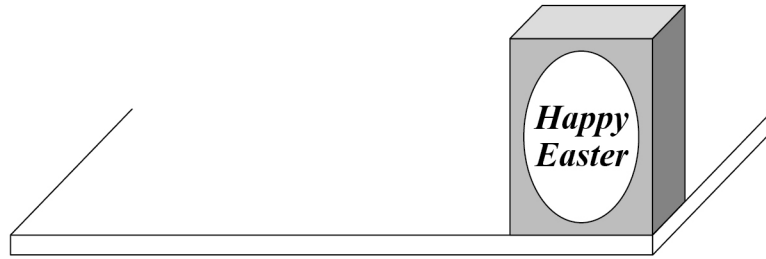
9 18 27 43

Question 3 continues on the next page

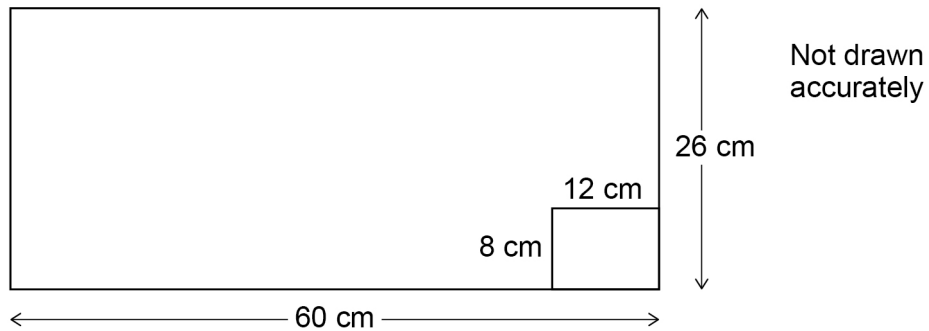
Turn over ►



3 (c) Carly puts each large egg in a box.
She puts the boxes on the top of a shelf as shown.



The base of each box is a 12 cm by 8 cm rectangle.
The top of the shelf is a 60 cm by 26 cm rectangle.



Only one layer of boxes can be put on the shelf.

Carly says,
"I can fit 15 boxes on the shelf."

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

[4 marks]



- 3 (d)** One week, Carly sells
25 large eggs for £3.50 each
and
48 small eggs for £1.10 each.

The table shows her costs for the week.

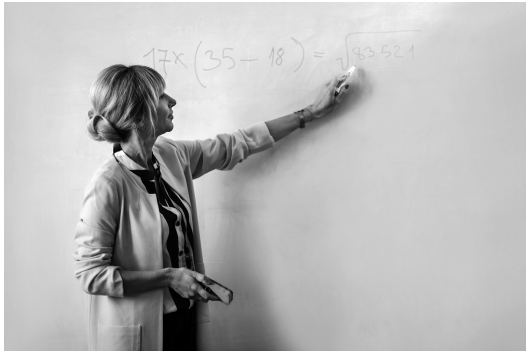
Chocolate	£40.15
Boxes	£12.25
Other costs	£14.70

She says,
“My profit is **more than** £70”

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

[7 marks]



4 Competition**Mrs Scott**

My students are taking part in a competition. I need a test paper for each student.

- †4 (a) Mrs Scott needs 115 test papers.
The papers are in packs of 5
How many packs does she need?

[2 marks]

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

[1 mark]



- 4 (b)** Kim and Ellie do some practice papers.
Here are their marks.

	Kim	Ellie
Paper 1	52	56
Paper 2	45	48
Paper 3	54	50
Paper 4	51	54

Ellie says,

“On average, I got higher marks than Kim.”

Is she correct?

You **must** show your working.

[3 marks]

- 4 (c)** Each question on the test paper has five answers to choose from.
For one question, Kim guesses the answer at random.

What is the probability that her guess is correct?

[1 mark]

Question 4 continues on the next page

Turn over ►



4 (d) There are 15 questions on the test paper.
Here are the scoring instructions.

	Correct answer	Incorrect answer
Questions 1 to 10	5 points	0 points
Questions 11 to 15	6 points	-1 point

Here are Kim's results.

Questions 1 to 10 9 correct answers
 Questions 11 to 15 2 correct answers
 All of her other answers were incorrect.

Did she score **more than** 55 points?
 You **must** show your working.

[5 marks]



4 (e) Altogether, 68 000 students take part in the competition.
30% of the students win an award.
Half of the awards are gold.
Is the number of gold awards **more than** 10 000?
You **must** show your working.

[4 marks]

16

END OF QUESTIONS



There are no questions printed on this page

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ANSWER IN THE SPACES PROVIDED**

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