AQA

Please write clearly in block capitals.

Centre number | | | | | | Candidate number | | | | |

Surname _____

Forename(s) _____

Candidate signature _____

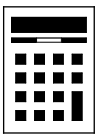
Functional Skills Certificate
FUNCTIONAL MATHEMATICS

Level 1

Wednesday 16 May 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 2(a) and 3(e). These questions are indicated with a †.

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

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ANSWER IN THE SPACES PROVIDED

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

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1 Garden birds

Here are some birds eating a fat cake.

1 (a) Jenny is making fat cakes.

She wants 3 fat cakes for each day from 1 November 2018 to 28 February 2019

November 2018						
Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

December 2018						
Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

January 2019						
Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

February 2019						
Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28		

Show that Jenny needs to make 360 fat cakes.

[2 marks]

Do not write outside the box

Jenny mixes bird feed and lard to make the 360 fat cakes.

Bird feed

Lard

She uses 80 grams of bird feed for each fat cake.

1000 grams = 1 kilogram

1 (b) Jenny has 29 kilograms of bird feed.

Is this enough for 360 fat cakes?
You **must** show your working.

[4 marks]

Do not write outside the box

1 (c) For a fat cake, the bird feed should weigh twice as much as the lard.

Jenny buys lard in packs weighing 200 grams.

Each pack costs 34p

Work out the cost of lard for 360 fat cakes.

[4 marks]

Question 1 continues on the next page

Do not write outside the box

1 (d) Jenny counted the sparrows in her garden at 8 am on ten days.

Emma counted the sparrows in her garden at 8 am on the same days.

Jenny	3	4	3	5	3	2	6	2	5	5
Emma	5	2	4	5	3	6	3	2	7	6

Emma says,

"On average, I counted more sparrows."

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

[3 marks]

13

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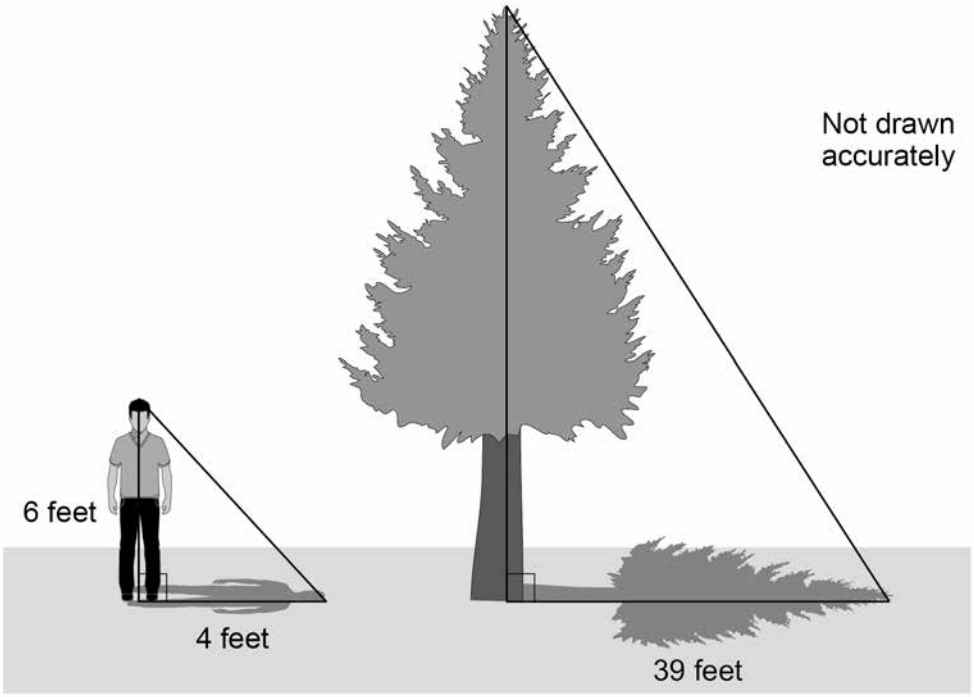
2 **Winset Park**

There is a **data sheet** for Winset Park.

Jeff works in Winset Park.

†2 (a) Jeff wants to work out the height of this tree.



Use the steps on the data sheet to work out the height of the tree.

[3 marks]

Check your answer.

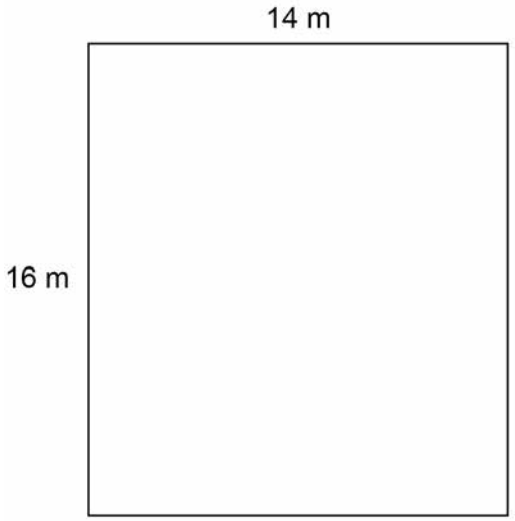
Show how you have done your check.

[1 mark]

Do not write outside the box

Jeff is designing a new rectangular playground for the park.

Here is a sketch of the playground.



Not drawn accurately

2 (b) Show that the area of the playground is 224 square metres.

[1 mark]

Do not write outside the box

2 (c) Jeff wants a safe surface for the playground.
He decides to use woodchips.

Woodchips

Large bags £53.75 each

Each bag covers 5 square metres

Jeff says,

"The bags of woodchips I need to buy will cost **less than** £2500"

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

[5 marks]

Question 2 continues on the next page

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2 (d) The table shows the items Jeff wants for the playground.

	Position	Space needed for each item
2 swing sets	At least 1 in the north half	7.5 m by 4 m rectangle
1 climbing frame	Anywhere	5 m by 5 m square
3 rockers	All in the south half	2 m by 2 m square

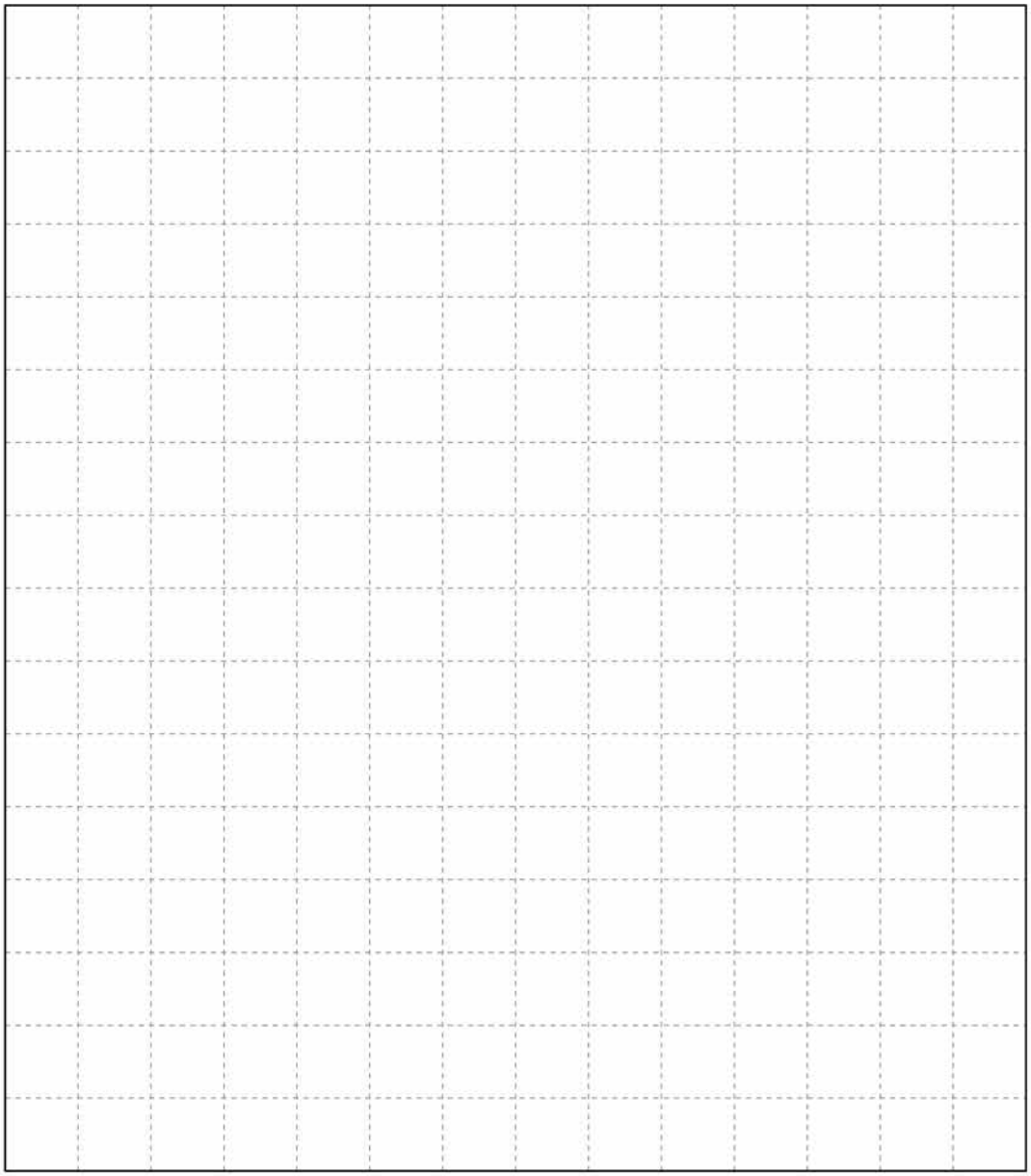
Show a possible design on the scale drawing opposite.

[5 marks]

Do not write outside the box

Scale: 1 cm represents 1 m

North



South

15

Turn over for the next question

Do not write outside the box

3 Fitness club

The table shows the price of membership at a fitness club.

Type of membership	Price per year
Adult	£240
Senior (aged 60 or over)	£160
Junior (aged 16 or under)	£110
Family (2 adults and 2 juniors)	£599

3 (a) Craig was born in 1949

What is the price per year of his membership?
Circle your answer.

[1 mark]

£240 £160 £110 £599

3 (b) Mr and Mrs Jones are both aged 42
They have two sons, aged 14 and 16
They all want to buy membership of the fitness club for a year.

Mrs Jones says,

"Family membership will save us more than £100"

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

[4 marks]

Do not write outside the box

3 (c) The table shows how many calories you burn running on a treadmill.

Speed (miles per hour)	Calories burned per hour
6	688
8	892

Sam runs at 8 miles per hour for 15 minutes.

How many calories does he burn?

[3 marks]

Question 3 continues on the next page

Do not write outside the box

3 (d) Amy, Kim, Sal and Tom are the trainers at the fitness club.

Two trainers work each day.

Complete a possible rota for next week so that

- Amy and Kim each work on four days
- Sal and Tom each work on three days
- nobody works for **more than** two days in a row.

[3 marks]

Practise on this rota.

	Trainer 1	**Trainer 2**
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		
Saturday		
Sunday		

Put your answer on this rota.

	Trainer 1	**Trainer 2**
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		
Saturday		
Sunday		

Do not write outside the box

†3 (e) The swimming pool contains 450 thousand litres of water.

There should be 2 millilitres of chlorine for each thousand litres of water.

How many millilitres of chlorine should there be in the pool?

[2 marks]

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

[1 mark]

14

Turn over for the next question

Do not write outside the box

4 **Saving money**

There is a **data sheet** for Saving money.

I want to open a bank account.

Sunita

She finds this information about two banks.

Bank A
We pay you £125 for opening an account. You pay a fee of £5 per month.

Bank B
We pay you £75 for opening an account and then £3 per month. We do not charge fees.

Sunita wants to choose Bank A or Bank B.

4 (a) Show that at the end of **6 months** she will have £2 more with Bank A.

[4 marks]

Do not write outside the box

4 (b) At the end of **7 months**, Sunita will have more money with Bank B.

How much more?
Circle your answer.

[1 mark]

£3 £4 £6 £10

4 (c) Sunita saves coins in a jar.

She sorts the coins to pay them into the bank.

She uses this paying-in form at the bank.

Coin	Number	Amount
£2	3	£6
£1	5	£5
50p	15	
20p	28	
10p	54	
5p	31	
2p	90	£1.80
1p	105	£1.05
	Total	

Complete the form.

[3 marks]

Question 4 continues on the next page

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4 (d) Dave buys 35 litres of **petrol** at Westco supermarket.

The petrol costs £1.20 per litre.

He says

"I have earned **more than** 40 points."

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

[3 marks]

4 (e) Dave has 24 500 points.

A holiday costs £820

He uses **all** his points towards the bill for the holiday.

He says

"I will also have to pay £90 in money."

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

[5 marks]

Do not write outside the box

4 (f) Vikki works at Westco supermarket.

When she buys groceries she gets 10% discount.

Work out the discount when she buys groceries that normally cost £58

[2 marks]

18

END OF QUESTIONS

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