



Please write clearly in block capitals.

Centre number

--	--	--	--	--	--

Candidate number

--	--	--	--	--	--

Surname

Forename(s)

Candidate signature

Functional Skills Certificate

FUNCTIONAL MATHEMATICS

Level 1

Monday 16 January 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 2(a) and 4(c). These questions are indicated with a †.

Advice

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



J A N 1 7 4 3 6 7 0 1

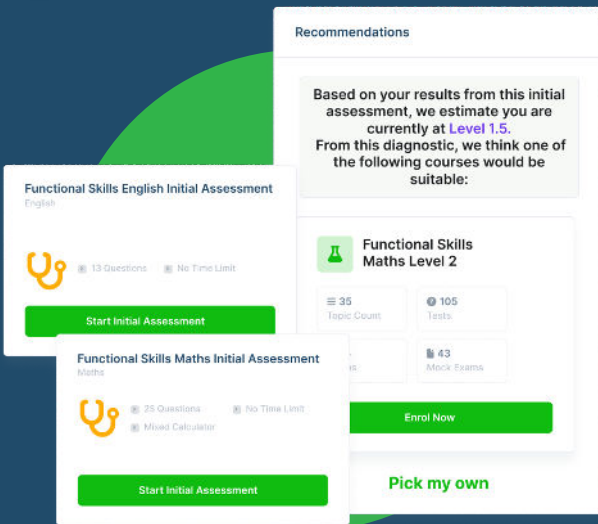
IB/M/Jan17/E15

4367

QAN 500/8703/4

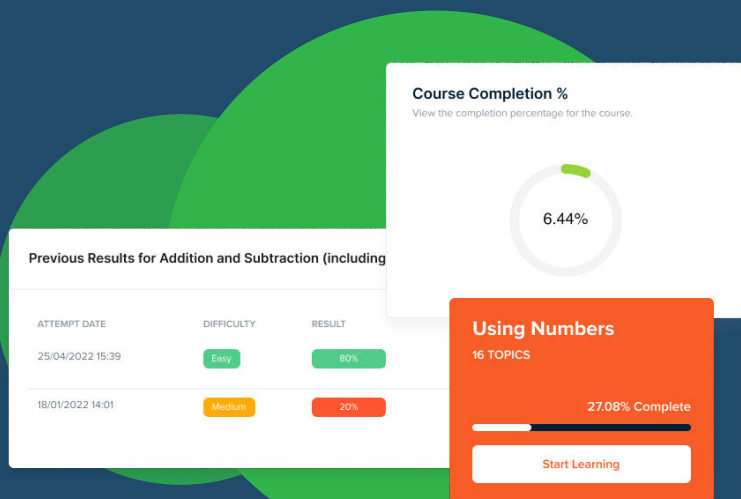
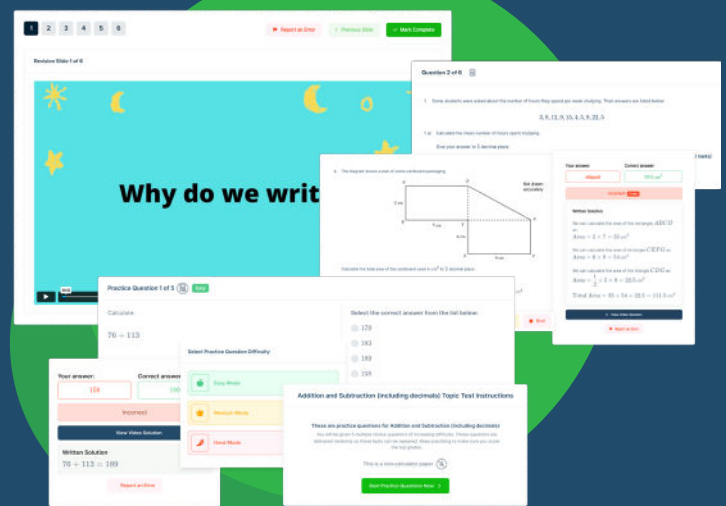


FUNCTIONAL SKILLS ONLINE COURSES



- ✓ Your answers are analysed to determine your Current Level
- ✓ Suggested courses for you to enrol on based on your calculated level
- ✓ Always know the level you are currently working at
- ✓ Determine when you are ready to sit your exam

- ✓ Explainer videos on every topic
- ✓ Quick-fire style multiple choice questions
- ✓ Test your knowledge with exam-style questions
- ✓ Written solutions for all questions



- ✓ See your progress through as you progress through each topic area
- ✓ Get your average scores for practice questions, topic tests and mock exams
- ✓ View all practice question, topic test and mock exam attempts over time
- ✓ View historical attempts to analyse your progress over time

Or visit
passfunctionalskills.co.uk

Answer all questions in the spaces provided.

1 Cookies



Chris

I make and sell cookies.

Chris makes batches of cookie dough.
Here are the ingredients he needs to make one batch.

One batch of cookie dough

200 g margarine

250 g flour

100 g sugar

2 eggs

1 teaspoon baking powder

One batch makes exactly

16 large cookies

or

24 small cookies.

1 (a) On Monday, Chris wants to make 4 batches of cookie dough.

How much flour does he need?
Circle your answer.

[1 mark]

250 g

400 g

800 g

1000 g



On Tuesday, Chris is making 16 large cookies and 48 small cookies.

1 (b) How many batches of cookie dough does he need?

[2 marks]

$$48 \div 16 = 3$$

$$3 + 1 = 4$$

4 batches.

1 (c) Chris has 1 egg.

Work out how many **more** eggs he needs.

[2 marks]

$$3 \times 2 = 6$$

$$6 - 1 = 5$$

5 eggs.

Question 1 continues on the next page



Each batch of cookie dough costs £1.92 to make.

On Wednesday, Chris makes 32 large cookies and 72 small cookies.

1 (d) Chris says,

"The cost will be £9.60"

Show that he is correct.

[2 marks]

$$\begin{array}{l} 32 \div 16 = 2 \text{ batches} \\ 72 \div 24 = 3 \text{ batches} \\ \hline 5 \times \pounds 1.92 = \pounds 9.60 \end{array} \quad \left. \begin{array}{l} \\ \\ \end{array} \right\} 5 \text{ batches.} \quad \text{Yes.}$$

1 (e) Chris sells the 32 large cookies and 72 small cookies in bags.

Here are his prices.

Bag of 4 large cookies £1.15

Bag of 12 small cookies £2.60

Chris says,

"If I sell all the cookies, I will make more than £15 profit."

Is he correct?

You **must** show your working.

[7 marks]

$$\begin{array}{l} 32 \div 4 = 8 \\ 72 \div 12 = 6 \\ 8 \times \pounds 1.15 = \pounds 9.20 \\ 6 \times \pounds 2.60 = \pounds 15.60 \\ \pounds 9.20 + \pounds 15.60 = \pounds 24.80 \\ \pounds 24.80 - \pounds 9.60 = \pounds 15.20 > \pounds 15.00 \\ \text{Yes.} \end{array}$$



2

CarsThere is a **data sheet** for Cars.**Alfie**

I am going to buy a new Renault Clio.

- †2 (a) Alfie plans to buy the new car after 1 April 2017

Work out the **total** cost of vehicle tax for the first two years.

[3 marks]

$$\begin{array}{r}
 \text{Renault Clio has } 90 \text{ CO}_2 \\
 \text{£100} \quad + \text{£140} \quad = \text{£240} \\
 \text{1st year} \quad \quad \quad \text{2nd year}
 \end{array}$$

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

[1 mark]

$$\text{£240} - \text{£140} = \text{£100}$$



For Alfie's Renault Clio,
the official mpg is 83
the actual mpg will be 8 less than this.

2 (b) Work out the actual mpg.

[1 mark]

$$83 - 8 = 75$$

2 (c) Alfie will use his new car for work.
He makes these notes.

I drive a total of 60 miles each day for work.
I work for 5 days each week.
Fuel costs £4.90 per gallon.

Alfie says,

"I will spend less than £20 each week on fuel for work."

Is he correct?

You **must** show your working.

[5 marks]

$$60 \times 5 = 300 \text{ miles.}$$

$$300 \div 75 = 4 \text{ gallons.}$$

$$\del{4} \times 4.90 = £19.60 < £20$$

Alfie is correct.



2 (d) Alfie buys a car.

For 5 days, he records the time he takes for
his journey to work by car
and
his journey home by car.

	Journey to work by car (minutes)	Journey home by car (minutes)
Monday	57	42
Tuesday	46	52
Wednesday	51	54
Thursday	40	46
Friday	44	58

He works out his total journey time by car each day.

He knows that his total journey time to work and home by **train** each day would be $1\frac{1}{2}$ hours.

He says,

"My total journey time by car on any day is likely to be more than it would be by train."

Based on these 5 days, is he correct?
You **must** show your working.

[3 marks]

$$\begin{array}{l}
 57+42=99 \quad 46+52=98 \quad 51+54=105 \quad 40+46=86 \quad 44+58=102 \\
 \frac{102+96+105+98+99}{5} = 98 \text{ mins} \\
 1\frac{1}{2} \text{ h} = 90 \text{ mins} < 98 \text{ mins.} \\
 \text{Yes.}
 \end{array}$$



3

Hotel



Kim

I am the manager of a hotel.

3 (a) Amy, Brad, Cassie and Del work shifts on the hotel reception.

Each day

- there are three shifts
- one person works each shift
- nobody works more than one shift.

The manager makes a rota for working on reception for the next week.

- Amy works on Monday, Tuesday, Wednesday and Sunday only.
- Brad does **not** work on Sunday.
- Cassie does **not** work on Wednesday.
- Del works on **exactly** 5 days.

Complete a possible rota.

[3 marks]



You can practise on this table.

	Shift 1	Shift 2	Shift 3
Monday	Amy	Brad	Cassie
Tuesday	Amy	Brad	Cassie
Wednesday	Amy	Brad	Del
Thursday	Del	Brad	Cassie
Friday	Del	Brad	Cassie
Saturday	Del	Brad	Cassie
Sunday	Amy	Del	Cassie

Put your answer in this table.

	Shift 1	Shift 2	Shift 3
Monday	Amy	Brad	Cassie
Tuesday	Amy	Brad	Cassie
Wednesday	Amy	Brad	Del
Thursday	Del	Brad	Cassie
Friday	Del	Brad	Cassie
Saturday	Del	Brad	Cassie
Sunday	Amy	Del	Cassie



3 (b) Each room is cleaned the day after it has been used.

Each cleaner

- takes 20 minutes to clean a room
- starts work at 8 am and finishes work at 3 pm
- has a 1-hour break.

180 rooms are used on Tuesday.

How many cleaners are needed on Wednesday?
You **must** show your working.

[5 marks]

$$8\text{am} - 3\text{pm} = 7\text{h}$$

$$7 - 1 = 6 \text{ hours.}$$

$$20\text{mins} = \frac{1}{3} \text{ hour.}$$

$$6 \times 3 = 18$$

$$180 \div 18 = 10$$



Each day, the cleaners replace used milk cartons.



- 3 (c) Here are the numbers of milk cartons put in 10 rooms yesterday.

4 3 1 4 1 2 3 3 2 1

Show that 2.4 was the mean number of milk cartons put in the 10 rooms.

[2 marks]

$$\frac{4+3+1+4+1+2+3+3+2+1}{10} = 2.4$$

- 3 (d) Kim estimates the cost of the milk cartons she needs next month.
She makes these notes.

3000 rooms used
An average of 2.4 cartons for each room used
120 cartons in a box
Each box costs £6

Kim says,

"The cost will be more than £350"

Is she correct?

You **must** show your working.

[5 marks]

$$3000 \times 2.4 = 7200$$

$$7200 \div 120 = 60$$

$$60 \times 6 = \pounds 360 > \pounds 350$$

Kim is correct.



4 Transporting hamsters

There is a data sheet for Transporting hamsters.



I organise the transport of hamsters.

Ola

4 (a) Ola needs a box to transport a Syrian hamster.

One side of the box has width 10 cm

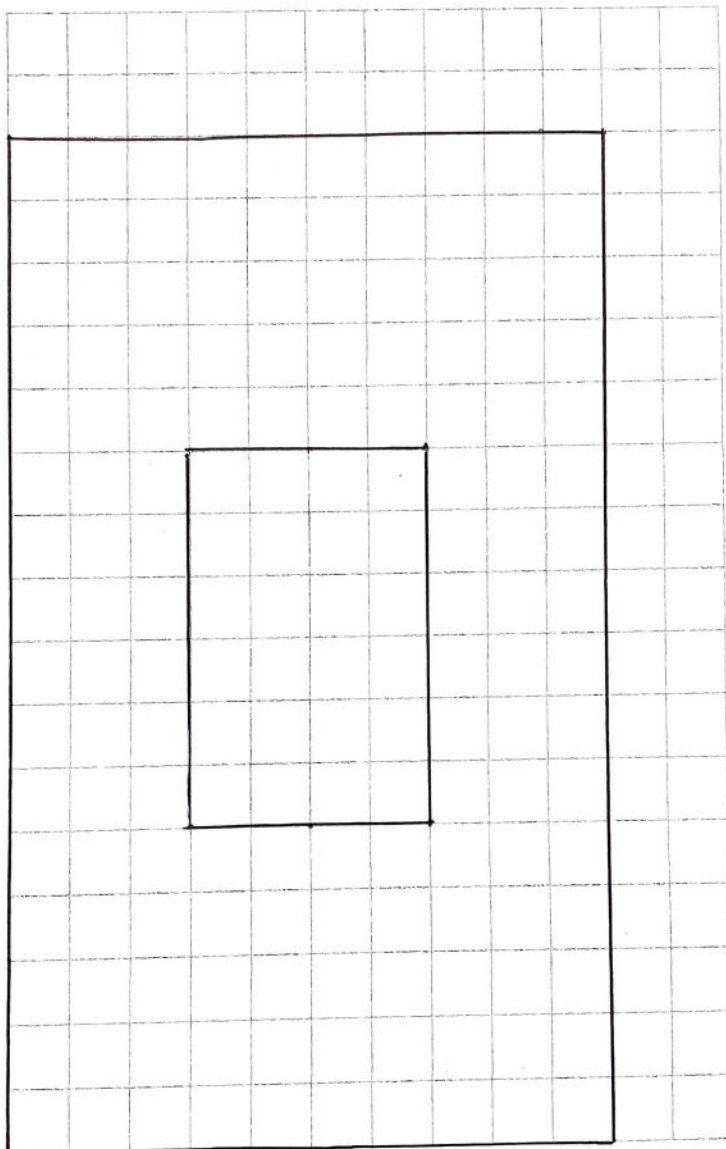
This side has a window.

The window is a 6 cm by 4 cm rectangle in the centre of the side.

Draw a possible diagram of this side of the box on the centimetre grid opposite.

[4 marks]





Turn over ►



- 4 (b) The table shows the ages of some Syrian hamsters Ola wants to transport.

Age	Number of hamsters
4 weeks	6
7 weeks	5

Ola says,

"A floor area of 600 cm^2 will be big enough for these hamsters."

Is she correct?

You **must** show your working.

[5 marks]

$$\begin{aligned}6 \times 45 + 5 \times 7 &= \\270 + 35 &= \\305 & \text{ cm}^2\end{aligned}$$



- †4 (c) Ola needs to transport 270 Dwarf hamsters.
The maximum number of hamsters allowed in one box is 50
Work out the **minimum** number of boxes she needs.

[3 marks]

$$270 \div 50 = 5.4$$

6.

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

[1 mark]

$$5.4 \times 50 = 270$$

Question 4 continues on the next page



- 4 (d) The maximum temperature allowed in a box used to transport hamsters is 85°F.
The temperature in a box is 28°C.

Can Ola transport hamsters in this box?
You **must** show your working.

[5 marks]

$$28 \times 9 = 252$$

$$252 \div 5 = 50.4$$

$$50.4 + 32 = 82.4 < 85$$

Yes.

18

END OF QUESTIONS

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.

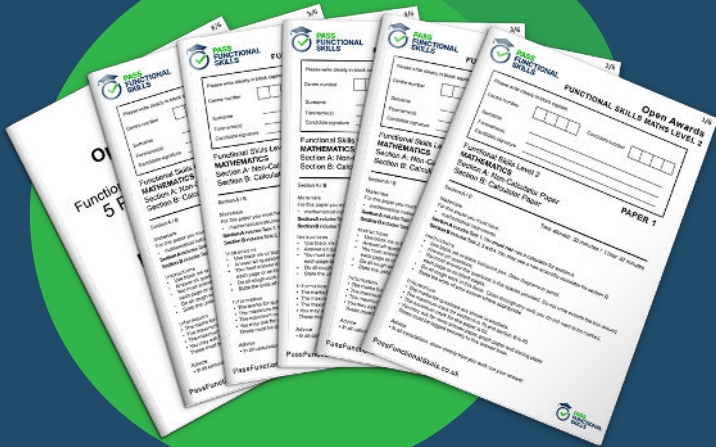
Permission to reproduce all copyright material has been applied for. In some cases, efforts to contact copyright-holders may have been unsuccessful and AQA will be happy to rectify any omissions of acknowledgements. If you have any queries please contact the Copyright Team, AQA, Stag Hill House, Guildford,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

Copyright © 2017 AQA and its licensors. All rights reserved.

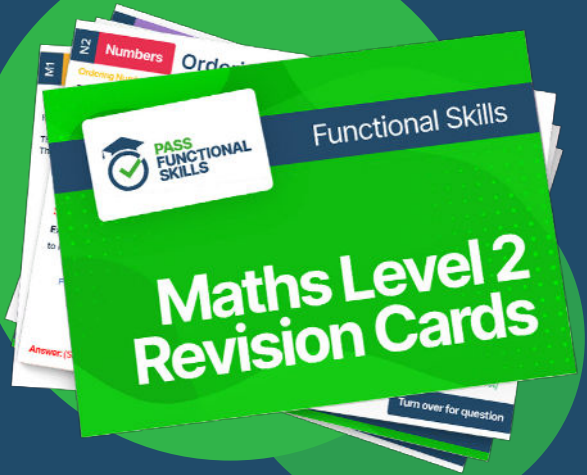




PASS
FUNCTIONAL
SKILLS



Functional Skills Maths
Level 2 Practice Papers



Functional Skills Maths
Level 2 Revision Cards



Functional Skills English Level 2
Practice Papers & Revision Cards



Functional Skills Maths
Level 2 Pocket Revision Guide

Or visit

passfunctionalskills.co.uk