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AQA

Functional Skills Certificate
FUNCTIONAL MATHEMATICS

Level 1

Tuesday 26 February 2019   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.
- If you need extra space for your answer(s), use the lined pages at the end of this book. Write the question number against your answer(s).
- 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(a) and 4(c). These questions are indicated with a †.

Advice

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

4367

QAN 500/8703/4

MAR19436701   IB/M/Mar19/E7

FUNCTIONAL SKILLS ONLINE COURSES

Recommendations

Based on your results from this initial assessment, we estimate you are currently at Level 1.5.
From this diagnostic, we think one of the following courses would be suitable:

Functional Skills Maths Level 2

≡ 35 Topic Count   ⏱ 105 Tests

📄 43 Mock Exams

Enrol Now

Pick my own

Functional Skills English Initial Assessment
English

🔬 13 Questions   No Time Limit

Start Initial Assessment

Functional Skills Maths Initial Assessment
Maths

🔬 25 Questions   No Time Limit
Mixed Calculator

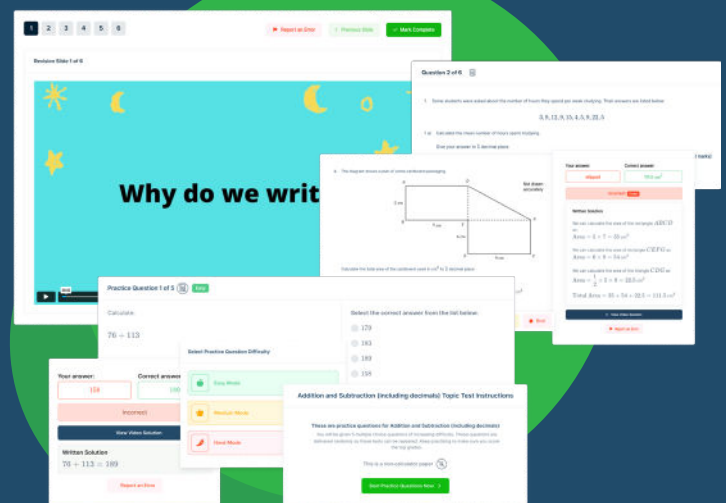**Start Initial Assessment**

- ✅ 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 mutiple choice questions
- ✅ Test your knowledge with exam-style questions
- ✅ Written solutions for all questions

Course Completion %
View the completion percentage for the course.

6.44%

Previous Results for Addition and Subtraction (including

ATTEMPT DATE	DIFFICULTY	RESULT
25/04/2022 15:39	Easy	80%
18/01/2022 14:01	Medium	20%

Using Numbers
16 TOPICS

27.08% Complete

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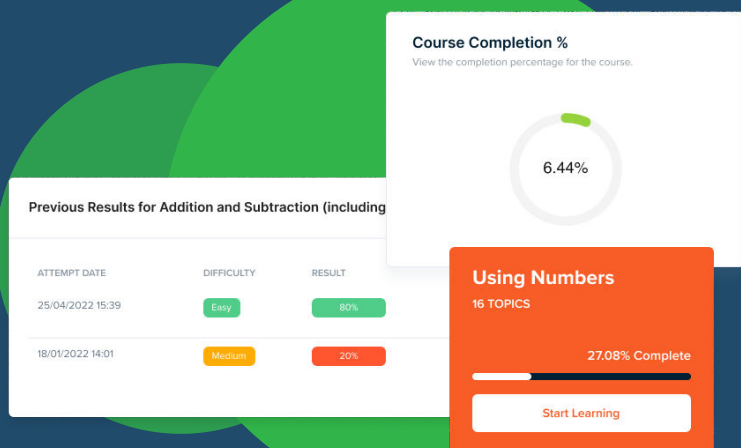
- ✅ See your progress through as you progress through each topic area
- ✅ Get your average scores for practice questions, topic tests and mock exams
- ✅ View all practice question, topic test and mock exam attempts over time
- ✅ View historical attempts to analyse your progress over time

Or visit
passfunctionalskills.co.uk

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

1   **Caravan**

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

We want to buy a new caravan.

Jane and Paul

Jane and Paul decide to buy this caravan.

Caravan for sale
£16 200

†1 (a)   They sell their old caravan for £4500

They will use this £4500 to pay some of the cost of the new caravan.

Work out how much **more** money they need to pay for the new caravan.

[2 marks]

£16200 − £4500 = £11700.

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

[1 mark]

£11700 + £4500 = £16200.

1 (b)   Jane and Paul want to borrow money to pay some of the rest of the cost of the caravan.

A loan company offers these loans.

Amount of loan	Amount of repayment per month				
	For 12 months	For 24 months	For 36 months	For 48 months	For 60 months
£5000	£457	£248	£179	£144	£123
£10 000	£913	£497	£358	£288	£247
£15 000	£1370	£745	£537	£433	£370

They borrow £10 000 to be paid back over 48 months.

Work out the total **interest** they will pay.

[3 marks]

£288 / month x 48 months = £13 824.

£13 824 − £10000 = £3824.

1 (c)   Jane and Paul pay £49 to join the Caravanners Society.

They get a discount of £9 per night at any Caravanners Society park.

Work out the smallest number of nights they must stay so that the total discount is **more than £49**

[2 marks]

$\frac{£49}{£9}$ = 5.4̇ →. 6 nights.

Turn over ▶

Jane and Paul book a holiday at Clover Meadow Caravan Park in Wales.

1 (d)   Paul is planning their journey.

They will set off at 1.30 pm

The journey is 160 miles.

They will travel 40 miles each hour.

They will stop for a break for 45 minutes during the journey.

Paul says,

"We should be at the caravan park **before** 6 pm"

Is he correct?

You **must** show your working.

[4 marks]

$$\frac{160 \text{ mi}}{40 \text{ mph}} = 4 \text{ hrs}$$

1:30pm + 4hrs + 45mins = 6:15pm.

No, he is Incorrect.

1 (e)   Paul makes these notes about the costs of the holiday.

Petrol	Journey to Wales and back	£68
	Using the car in Wales	£35
Caravan park	Stay 7 nights	
	Pitch fee	£27 per night
	Using electricity	£2 per night
	Discount	£9 per night

Paul says,
    "The total cost should be **less than £250**"

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

[5 marks]

£27 + £2 − £9 = £20 per night.

£20 × 7 = £140.

£140 + £68 + £35 = £243

Yes, he is correct.

17

Turn over ▶

2   **Block paving**
         There is a **data sheet** for Block paving.

         Tom's company builds driveways.

         I plan and build block paving.

         Tom

         Here is a sketch of a rectangular driveway.
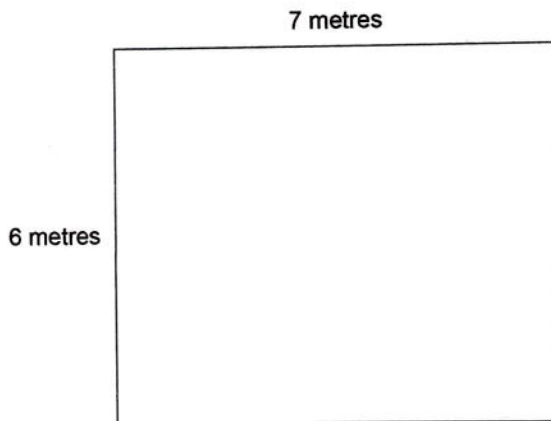
         7 metres   Not drawn
                                                      accurately

         6 metres

         Tom is going to build this driveway using block paving.

2 (a)   Tom has to remove material to make a hole for the foundation.

The depth of the foundation is 300 millimetres.

Work out the amount of material, in cubic metres, he has to remove.
Use the steps on the data sheet.

[4 marks]

$7m \times 6m = 42m^2$.

$300mm = \cancel{32}m = 0.3m$

$42m^2 \times 0.3m = 12.6m^3$

2 (b)   The usual cost of stone is £80 per cubic metre.

Tom gets a discount of 10%

He orders 4 cubic metres of stone.

Work out the total amount of **discount** Tom gets.

[3 marks]

£80 × 4 = £320.

£320 × 0.1 = £32.

Turn over ▶

Tom is going to cover the driveway using light tiles and dark tiles.

10 cm   10 cm   Not drawn
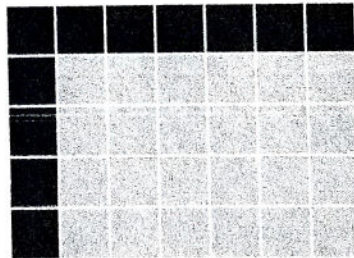   accurately

10 cm   10 cm
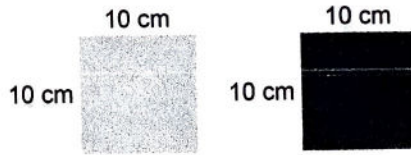
He first puts dark tiles along the edges of the driveway.

700 cm   Not drawn
                                accurately
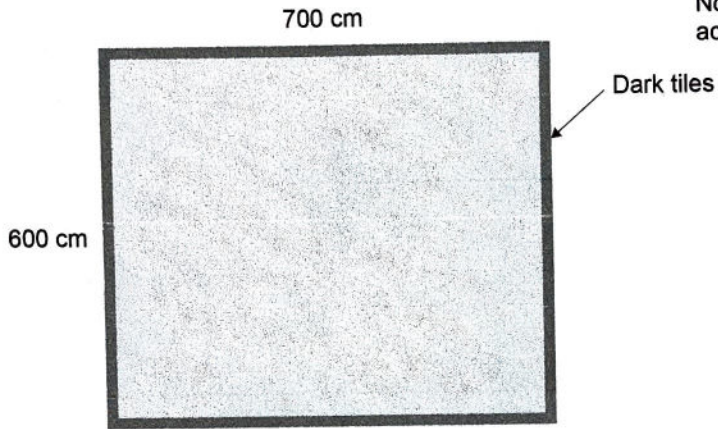
Dark tiles

600 cm

This diagram shows how the tiles are arranged at a corner of the driveway.

Not drawn
accurately

Do not write outside the box

2 (c) Work out the total number of dark tiles needed for the edges of the driveway.

[4 marks]

700 + 600 + 700 + 600 = 2600 cm.

$\frac{2600}{10}$ = 260 tiles.
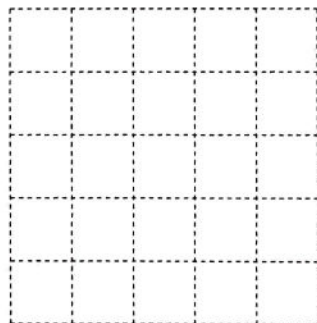
Tiles have been counted twice at the corners, so,

260 − 4 = 256.

2 (d) Tom is designing a pattern of square tiles for part of the driveway.
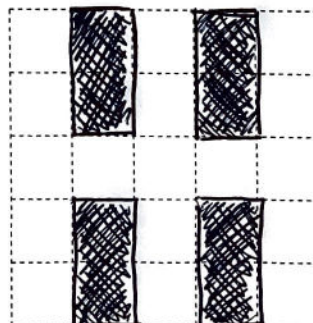He wants to put 8 dark tiles into this grid.

Shade 8 tiles so that the grid has exactly **two** lines of symmetry.

[2 marks]

Practise on this grid.

Put your answer on this grid.

13

Turn over ▶

IB/M/Mar19/4367

3   **Flower shop**

Anaya makes and sells bouquets of flowers in her flower shop.

Anaya   **Bouquet of flowers**

Anaya makes bouquets using roses, lilies and carnations.

The table shows the number of each type of flower in a standard bouquet.

Roses	Lilies	Carnations
4	5	11

3 (a)   What percentage of the 20 flowers in a standard bouquet are lilies?
Circle your answer.

[1 mark]

4%   5%   25%   33%

3 (b)   Anaya makes some standard bouquets and 3 luxury bouquets.

She uses 24 roses with lilies and carnations to make the standard bouquets.

She sells

     the 3 luxury bouquets for £35 each

     all of the standard bouquets for £22 each.

Anaya says,

     "I have sold these bouquets for a total of **more than £250**"

Is she correct?

You **must** show your working.

[6 marks]

$$\frac{24}{4} = 6 \text{ standard bouquets.}$$
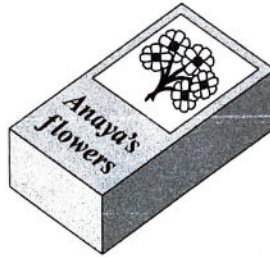
$$(3 \times £35) + (6 \times £22) =$$

$$£105 + £132 =$$

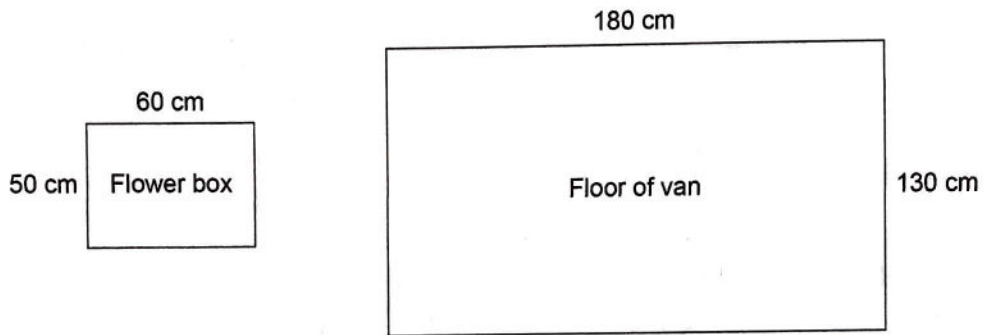$$£237$$

No, she is incorrect.

3 (c)　　Anaya packs the bouquets in boxes for delivery in her van.

The base of each box is a 60 cm by 50 cm rectangle.

The floor of the van is a 180 cm by 130 cm rectangle.

Not drawn
accurately

180 cm

60 cm

50 cm | Flower box

Floor of van

130 cm

Work out the maximum number of boxes that will fit on the floor of the van.

[4 marks]

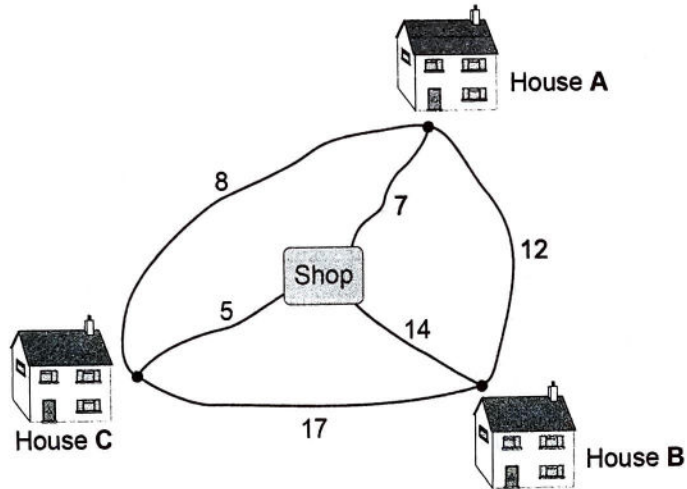$\frac{180}{60} = 3$, $\frac{130}{50} = 2.6 \Rightarrow 2.$ 　　　$2 \times 3 = 6.$

$\frac{180}{50} = 3.6 \Rightarrow 3$, $\frac{130}{60} = 2.1\dot{6} \Rightarrow 2$ 　　　$3 \times 2 = 6.$

$\Rightarrow$ 　6　boxes　(either configuration).

3 (d) Anaya sets off from her shop to deliver flowers to three houses, A, B and C.

This diagram shows distances in miles.

Not drawn accurately

House A

House C

House B

8

7

Shop

12

5

14

17

Anaya wants to

- start and finish at her shop
- visit each house once only
- take the shortest route.

Work out a possible route **and** the total distance she drives.

[5 marks]

$SABCS = SCBAS = 5 + 17 + 12 + 7 = 41.$

$SBACS = SCABS = 5 + 8 + 12 + 14 = 39.$

$SABBS = SBCAS = 14 + 17 + 8 + 7 = 46.$

$SBACS$ or $SCABS$ is the best route (these are equivalent / opposite routes), totalling 39 miles.

16

Turn over ▶

4   **Telephone operator**

Lizzie is a telephone operator.

Lizzie lives in Oxford.

She works in Bicester.

Here is part of the bus timetable from Oxford to Bicester.

Oxford	0655	0720	0740	0805	0820	0825	0840
Summertown	0702	0727	0748	0812	0828	0833	0848
Gosford	0711	0736	0757	0821	0837	0842	0857
Park & Ride	0721	0746	0807	0831	0847	0852	0907
Bicester	0723	0748	0809	0833	0849	0854	0909

4 (a)   How much time does the 0740 bus take to travel from Oxford to Bicester?
Circle your answer.

[1 mark]

8 minutes   28 minutes   (29 minutes)   60 minutes

4 (b) To get to work, Lizzie

walks from home to the bus stop in Oxford in 12 minutes

gets the bus from Oxford to Bicester

walks from the bus stop in Bicester to work in 7 minutes.

Lizzie leaves home at 8 o'clock.

She says,

"I should get to work **before** 9 o'clock."

Is she correct?

You **must** show your working.

[5 marks]

8:00am + 12min = 8:12am.

Next bus is at 8:20am.

8:20am → 8:49am.

8:49am + 7mins = 8:56am.

Yes, she is correct.

Question 4 continues on the next page

Turn over ▶

†4 (c)   Lizzie is paid £8.64 per hour.

How much is Lizzie paid for 37 hours?

[2 marks]

£8.64 × 37 = £319.68

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

[1 mark]

$$\frac{£319.68}{£8.64} = 37$$

4 (d) Lizzie has this target for her calls.

> The mean time per call should be less than 8 **minutes**

Here are the times, in **seconds**, for 10 of her calls.

| 453 | 399 | 504 | 483 | 411 | 312 | 90 | 843 | 471 | 534 |

Has she met her target with these 10 calls?
You **must** show your working.

[5 marks]

$453 + 399 + \ldots + 471 + 534 = 4500$

$$\frac{4500}{60} = 75$$

$$\frac{75}{10} = 7.5 \text{ minutes.}$$

Yes, she has met her target.

END OF QUESTIONS
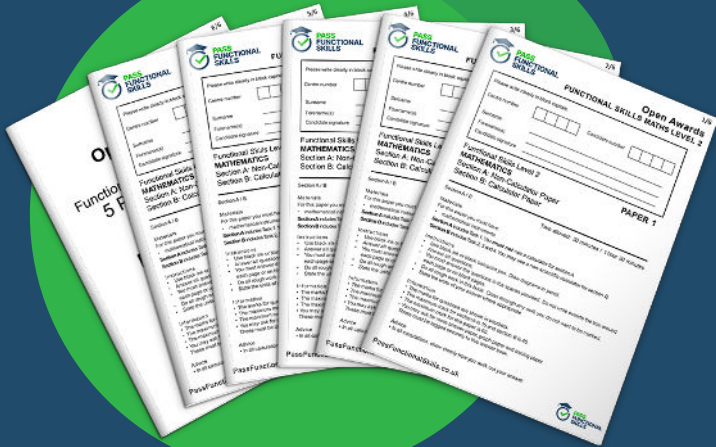
14

There are no questions printed on this page

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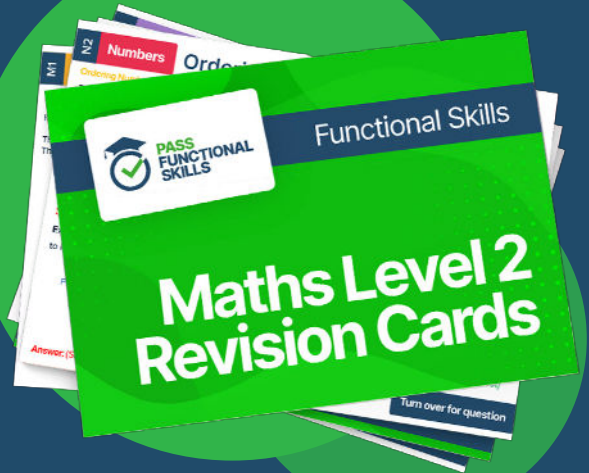**ANSWER IN THE SPACES PROVIDED**

1 8

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