AQA

Please write clearly in block capitals.

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

Surname _____

Forename(s) _____

Candidate signature _____

I declare this is my own work.

Functional Skills Level 2 MATHEMATICS

Paper 2 Calculator

Time allowed: 1 hour 30 minutes

Materials

For this paper you must have:

- a calculator
- mathematical instruments.

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.

For Examiner's Use	
Question	Mark
1–6	
7	
8	
9	
10	
TOTAL	

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.
- If your calculator does not have a π button, take the value of π to be 3.142

Advice

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

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IB/M/Jan22/E6

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QAN 603/4258/4

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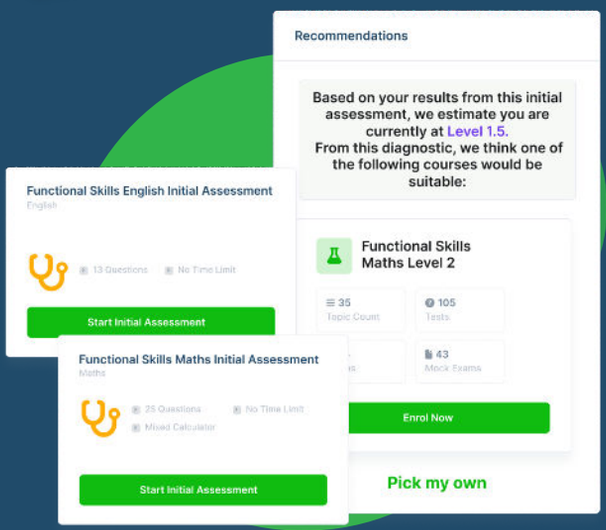
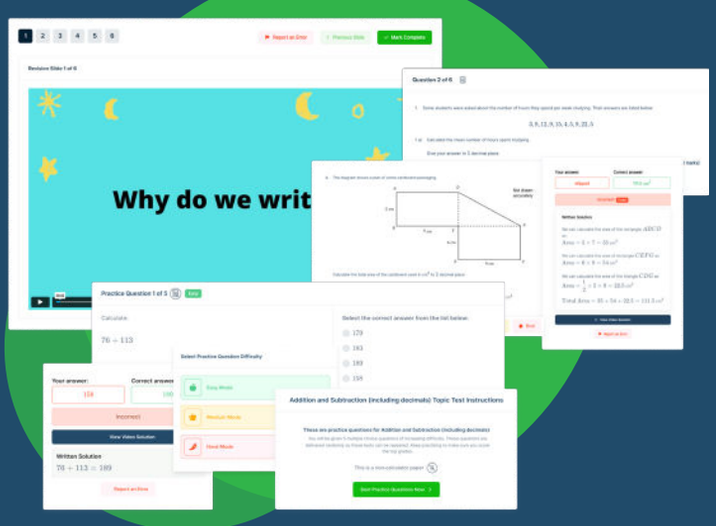
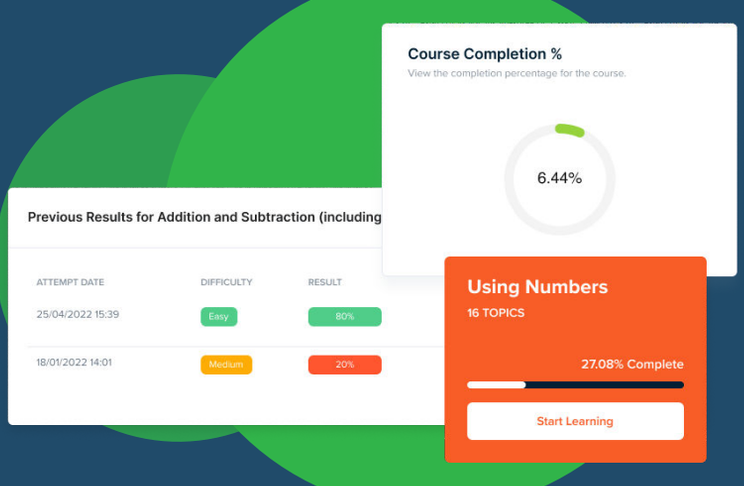
FUNCTIONAL SKILLS ONLINE COURSES



- 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 mutiple 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

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Section A

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

1 Here are six numbers.

3 3 3 4 6 8

Work out the median.

Circle your answer.

[1 mark]

3 (3.5) 4.5 5

2 Here is a scale.

2 cm represents 5 m

What does a length of 7.2 cm represent?

[2 marks]

$7.2 \div 2 = 3.6$

$3.6 \times 5 = 18$ m

Answer 18 m

Do not write outside the box

3 Work out the value of $a^2 - 4b$ when $a = 3.6$ and $b = 1.7$

[2 marks]

$a^2 - 4b = 3.6^2 - 4 \times 1.7$

$= 3.6 \times 3.6 - 4 \times 1.7$

$= 12.96 - 6.8$

$= 6.16$

Answer 6.16

4 Write these fractions in order, starting with the **smallest**.

$\frac{13}{20}$ $\frac{27}{40}$ $\frac{3}{5}$

[2 marks]

$\frac{13}{20} = \frac{26}{40}$ (×2) $\quad \frac{27}{40} = \frac{27}{40}$ $\quad \frac{3}{5} = \frac{24}{40}$ (×8)

$\frac{24}{40}, \frac{26}{40}, \frac{27}{40}$

$\frac{3}{5}, \frac{13}{20}, \frac{27}{40}$

Answer $\frac{3}{5}$, $\frac{13}{20}$, $\frac{27}{40}$

Turn over for the next question

Do not write outside the box

5 Without calculating the exact value,

use approximations to estimate the answer to 376 025 × 6.1

[2 marks]

$376\,025 \approx 400\,000$

$6.1 \approx 6$

$400\,000 \times 6 = 2\,400\,000$

Answer 2,400,000

6 Complete the table to show equivalent fractions, decimals and percentages.

[3 marks]

Fraction	Decimal	Percentage
$\frac{1}{25}$	0.04	4%
$\frac{23}{100}$	0.23	23%
$\frac{7}{1000}$	0.007	0.7%

12

Do not write outside the box

Section B

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

7 Jam

Daisy makes jam and sells it at a farmers' market.

7 (a) Daisy makes 24 jars of blueberry jam.

The table shows the cost of the ingredients and jars that Daisy needs.

Item	Needs	Cost
Blueberries	4.5 kg	£1.79 per 150 g
Sugar	5 kg	£2.08 per kg
Lemons	4	17p each
Glass jars	24	£3.90 for 6

How much will it cost Daisy to make the 24 jars of jam?

[6 marks]

Blueberries: 4.5kg = 4500g 4500 ÷ 150 = 30

30 × £1.79 = £53.70

Sugar: 5 × 2.08 = £10.40

Lemons: 4 × 0.17 = £0.68

Glass jars: 24 ÷ 6 = 4

4 × £3.90 = £15.60

53.70 + 10.40 + 0.68 + 15.60 =

£80.38

Answer £ 80.38

Question 7 continues on the next page

Do not write outside the box

7 (b) The glass jars are in the shape of a cylinder of radius 3.4 cm

Daisy fills a jar to a height of 7.5 cm

1 cm^3 of jam has a mass of 1.29 grams.

Work out the mass of jam in the jar.

[4 marks]

Volume $= \pi r^2 h$

$= 3.142 \times 3.4^2 \times 7.5$

$= 272.4114\ cm^3$

Mass $= 272.4114 \times 1.29$

$= 351.410706\ g$

Answer 351.4 grams

Do not write outside the box

7 (c) Daisy had 60 jars of jam to sell at a farmers' market.

She sold 42 jars at £4.50 each.

She then reduced the price.

She sold the remaining jars at the reduced price.

Daisy received £245.70 from the sale of the 60 jars.

By what percentage did she reduce the price?

You **must** show your working.

[6 marks]

42 × 4.5 = £189.00

£245.70 − £189.00 = £56.70

60 − 42 = 18

56.7 ÷ 18 = £3.15

$\frac{4.50 - 3.15}{3.15} \times 100\% = 30\%$

Answer 30 %

16

Turn over for the next question

Do not write outside the box

8 **Electric car**

Jamal has an electric car.

The car is powered by a rechargeable battery.

8 (a) Jamal installs a charging point to charge the car at home.

The government pays 40% of the cost.

Jamal pays £525

Work out the full cost.

[3 marks]

525 ÷ 0.6 = £875

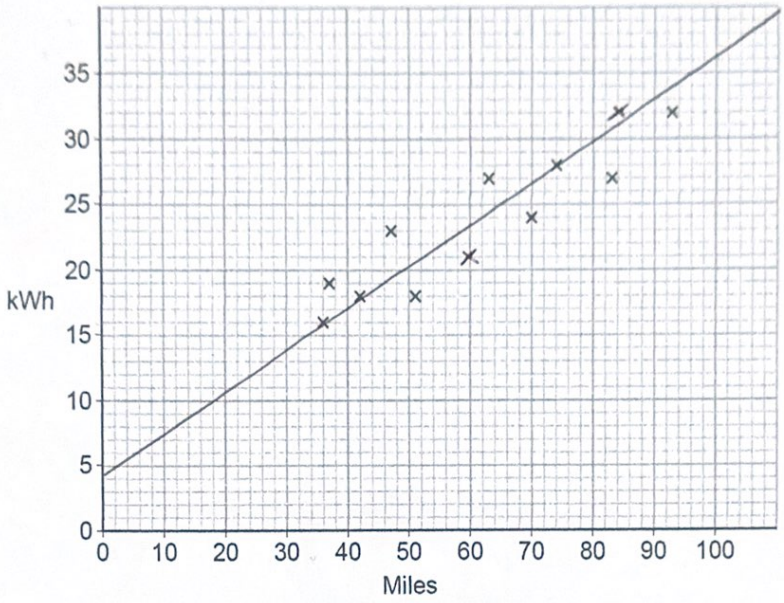
Answer £ 875

Do not write outside the box

8 (b) Jamal wants to know the approximate cost of the electricity used for a car journey.

He records information about the miles driven and electricity used (kWh) for 12 journeys.

10 of the journeys are shown on the scatter diagram.



The table shows the extra data for the other two days.

Miles driven	Electricity used (kWh)
60	21
84	32

1 kWh of electricity costs 15p

Use the scatter diagram **with the extra data** to estimate the **cost** to drive 80 miles.

You **must** show your working, some of which should be on the diagram.

[6 marks]

80 miles = 30 kWh

30 x 15 = 450 p

£4.50

Answer £ 4.50

9

Turn over ▶

Do not write outside the box

9 **Fitness gym**

Nicole manages a fitness gym.

9 (a) One week, Nicole recorded how many people used the rowing machine.

From Monday to Friday,

the mean number of people who used the machine was 21 per day.

From Monday to Sunday,

the mean number of people who used the machine was 26 per day.

32 people used the machine on Saturday.

How many people used the machine on **Sunday**?

[3 marks]

M-F total = 21 × 5 = 105

M-S total = 26 × 7 = 182

182 - 105 = 77 Weekend total

77 - 32 = 45 people on Sunday

Answer 45

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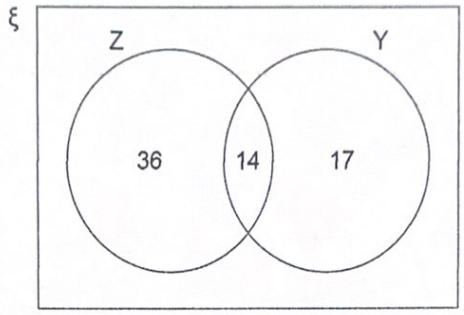
9 (b) The gym has two classes on one day.

The Venn diagram represents the members who attended at least one class.

Z = Zumba class

Y = Yoga class



One of these gym members is chosen at random.

Work out the probability that the member attended exactly **one** of the classes.

[3 marks]

Total = 36 + 14 + 17 = 67

One class = 36 + 17 = 53

$\frac{53}{67}$

Answer $\frac{53}{67}$

Question 9 continues on the next page

Do not write outside the box

9 (c) Lottie and Emma visit the gym.

They both exercise by running on the treadmill.

Lottie runs for 36 minutes at an average speed of 7.24 miles per hour.

Emma runs 4.125 miles.

How much further did Lottie run than Emma?

[4 marks]

Lottie: $36 \div 60 \times 7.24 = 4.344$

$4.344 - 4.125 = 0.219$

Answer 0.219 miles

10

Do not write outside the box

10 **Craft business**

Ros runs a craft business.

She makes teddy bears and cushions.

10 (a) Ros has £350 to spend on a new sewing machine.

She buys this sewing machine.

SEWING MACHINE
WAS £395
NOW 17% OFF

How much of the £350 does Ros have left?

[4 marks]

395 × 0.83 = £327.85

350 − 327.85 = £22.15

Answer £ 22.15

Question 10 continues on the next page

Do not write outside the box

10 (b) Ros makes circular cushion covers.

Each cover has a zip.

She uses these steps to work out the length of zip needed.

Step 1 Use the diameter to work out the circumference of the cover

Step 2 Divide the answer to **Step 1** by 2

Step 3 Subtract $\frac{1}{4}$ of the diameter from the answer to **Step 2**

A cushion cover has a diameter of 16 **inches.**

Work out the length of the zip in **centimetres.**

Use 1 inch = 2.5 centimetres

[5 marks]

$16 \times 3.142 = 50.272$

$50.272 \div 2 = 25.136$

$25.136 - 4 = 21.136$

$21.136 \times 2.5 = 52.84$

Answer 52.84 cm

Do not write outside the box

10 (c) Ros makes small teddy bears and large teddy bears.

She fills the teddy bears with wool.

The weight of wool she uses for each bear is in the ratio

small teddy bears : large teddy bears = 2 : 3

Ros uses 560 g of wool to fill one **small** teddy bear.

How many **large** teddy bears can she fill from a 10 kg bag of wool?

[4 marks]

×280 (2 : 3) ×280

560 : 840

840g in large bear

10kg = 10000g

10000 ÷ 840 = 11.904...

11 bears total

Answer 11

13

END OF QUESTIONS

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Question number	Additional page, if required. Write the question numbers in the left-hand margin.

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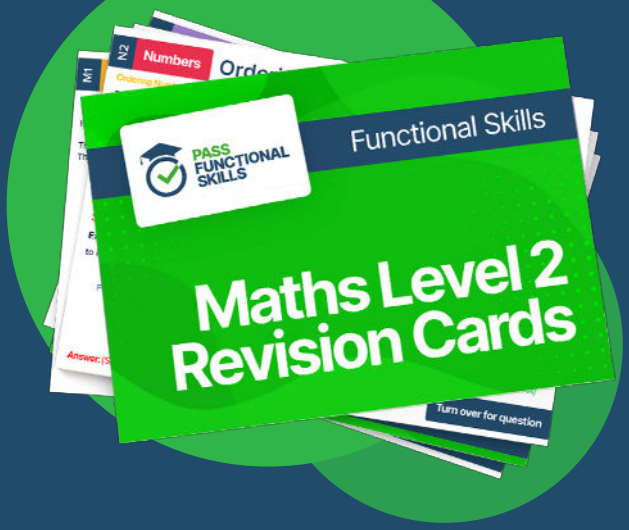

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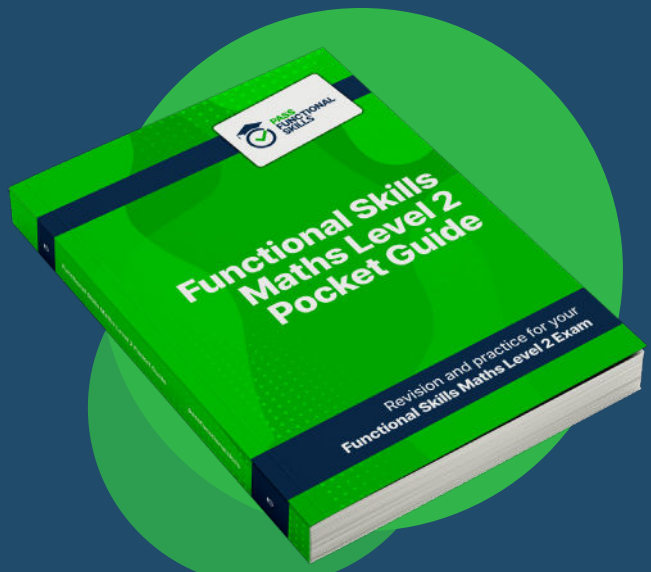

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