Please check the examination details below before entering your candidate information

Candidate surname	Other names

Pearson Edexcel Functional Skills

Centre Number	Candidate Number

Past Paper 1

Time: 25 minutes | Paper Reference **PMAT2/N01**

Mathematics

Level 2
Section A (Non-Calculator)

You must have:
Pen, HB pencil, eraser, ruler graduated in cm and mm, protractor, pair of compasses. Tracing paper may be used.

Total Marks

My signature confirms that I will not discuss the content of the test with anyone.

Signature: _____

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Sign the declaration.
- Answer **all** questions.
- Write your final answers in the boxes provided.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- You **must** show clearly how you get your answers in the spaces provided. Marks will be awarded for your working out.
- Check your working and your answers at each stage.
- Diagrams are **not** accurately drawn, unless otherwise indicated.
- **Calculators may not be used.**
- Take the value of π to be 3.14

Information

- The total mark for this section is 16.
- The marks for each question are shown in brackets – *use this as a guide as to how much time to spend on each question.*
- This sign ☑ shows where marks will be awarded for showing your checks.

Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

Turn over ▶

P64952A

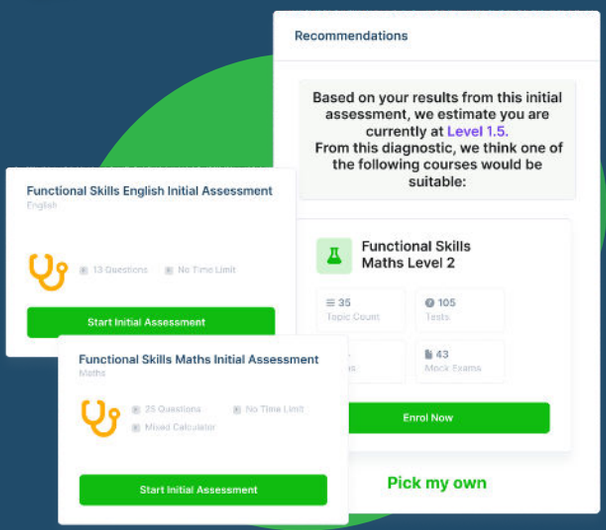
1/1/1/1/1

P 6 4 9 5 2 A 0 1 0 8

Pearson

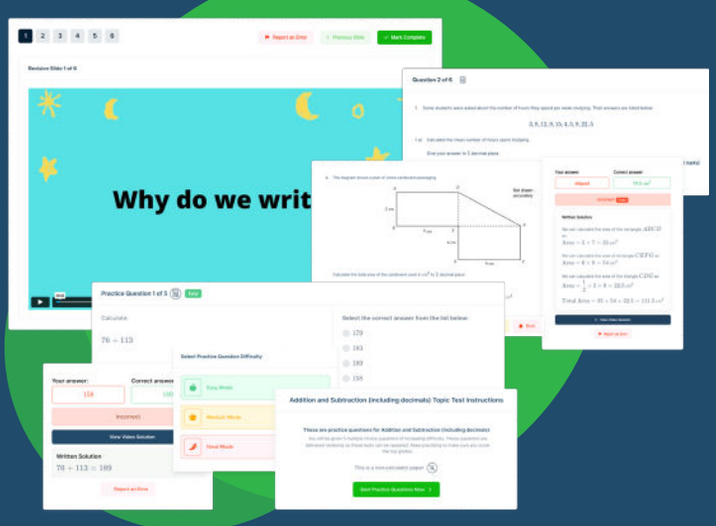
PASS FUNCTIONAL SKILLS

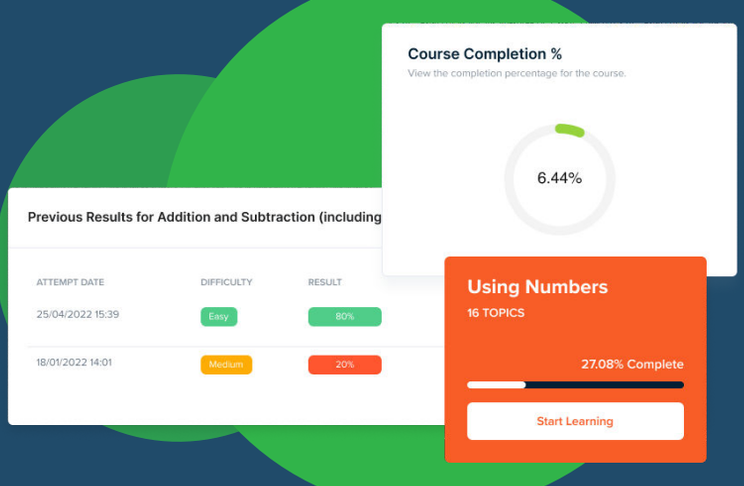
FUNCTIONAL SKILLS ONLINE COURSES



- 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

SECTION A

Answer ALL questions. Write your answers in the spaces provided.

1

(a) Work out 5.2×9.6

(2)

×	50	2
90	4500	180
6	300	12

4992

49.92

(b) Work out 4×3^2

(1)

4 x 9

36

(Total for Question 1 is 3 marks)

2 On Thursday evening Malcolm's bank balance was –£107.35

On Friday morning
- £1867.68 is paid into his bank account
- £715.21 is paid out of his bank account.

No other payments occur.

Work out how much money is in Malcolm's bank account on Friday evening.

(3)

$-107.35 + 1867.68 = 1760.33$

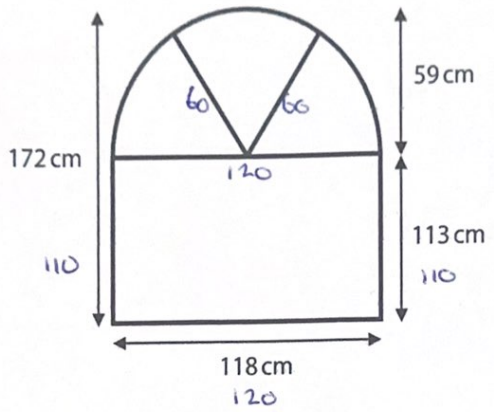
$1760.33 - 715.21 = 1045.12$

£ 1045.12

(Total for Question 2 is 3 marks)

3 Akash needs to put plastic trim on a shaped window.
The window is made using a rectangle and a semi-circle.

The diagram shows the places where he needs to put the plastic trim.



Key
plastic trim

Akash estimates that he will need 700 cm of plastic trim in total.

Use estimation to check if Akash's estimate is sensible.
You **must** show your working.

(4)

$118 \approx 120$ (diameter of semi circle)

radius ≈ 60

Arc length: $\frac{\pi d}{2} \rightarrow \frac{3 \times 120}{2} = 180$

Total: $110 + 110 + 120 + 120 + 60 + 60 + 180$

$= 760$

No → 760cm

(Total for Question 3 is 4 marks)

4 Calvin is a train company manager.

He compares the arrival times of a morning train service for 10 days in the summer and for 10 days in the winter.

In the summer the median number of minutes late was 12.7 minutes.
The range of the number of minutes late was 11 minutes.

The results below show the number of minutes late in the winter.

8, 32, 44, 5, 17, 67, 9, 14, 10, 26

Calvin thinks that in the winter

- the median number of minutes late increases
- the train service is less consistent.

Is Calvin correct?
Show why you think this giving reasons with your answers.

(6)

summer: median = 12.7 range = 11

winter: 5 8 9 10 14 17 26 32 44 67

median $\frac{14+17}{2} = 15.5$

range 67 - 5 = 62

~~yes~~

Yes, the median in winter is much larger than summer. The range in winter is larger so trains are less consistent.

(Total for Question 4 is 6 marks)

TOTAL FOR SECTION A IS 16 MARKS

Please check the examination details below before entering your candidate information

Candidate surname	Other names

Pearson Edexcel Functional Skills

Centre Number	Candidate Number

Past Paper 1

Time: 1 hour 30 minutes | Paper Reference **PMAT2/C01**

Mathematics

Level 2
Section B (Calculator)

You must have:
Pen, calculator, HB pencil, eraser, ruler graduated in cm and mm, protractor, pair of compasses. Tracing paper may be used.

Total Marks

My signature confirms that I will not discuss the content of the test with anyone.

Signature: _____

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Sign the declaration.
- Answer **all** questions.
- Write your final answers in the boxes provided.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- You **must** show clearly how you get your answers in the spaces provided. Marks will be awarded for your working out.
- Check your working and your answers at each stage.
- Diagrams are **not** accurately drawn, unless otherwise indicated.
- **Calculators may be used.**
- If your calculator does not have π button take the value of π to be 3.14

Information

- The total mark for this section is 48.
- The total mark for this paper is 64.
- The marks for each question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*
- This sign ☑ shows where marks will be awarded for showing your checks.

Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

Turn over ▶

P64953A

1/1/1/1

P 6 4 9 5 3 A 0 1 2 0

Pearson

SECTION B

Answer ALL questions. Write your answers in the spaces provided.

1 Adam works for an agency.
His normal hourly rate is £8.32

The agency asks Adam to work 6 hours for a new company.
Adam will be paid time and a third of his normal hourly rate.

How much will Adam get paid in total when working for the new company?

(3)

$6 \times 8.32 = 49.92$

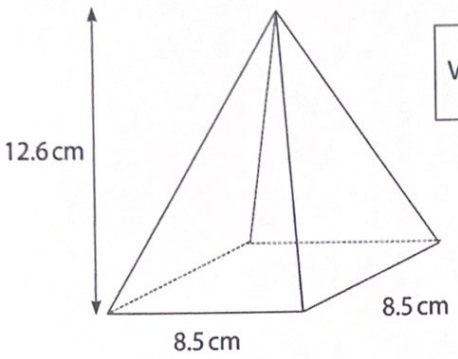
$\frac{1}{3}$ of $49.92 = 49.92 \div 3 = 16.64$

$49.92 + 16.64 = 66.56$

£ 66.56

(Total for Question 1 is 3 marks)

2 Here is a square based pyramid.



Volume of pyramid = $\frac{1}{3}$ × area of base × height

Work out the volume of this pyramid.

(3)

$8.5 \times 8.5 = 72.25$

$\frac{1}{3} \times 72.25 \times 12.6 = 303.45$

303.45 cm³

(Total for Question 2 is 3 marks)

3 Rana donated to 4 charities last year.
She gave £175 to each of these charities.

This year Rana wants to donate the same total amount between 6 charities.
Each charity will receive an equal amount.

(a) How much will each charity receive this year?

(3)

175 x 4 = 700

700 ÷ 6 = 116.66...

£ 116.67

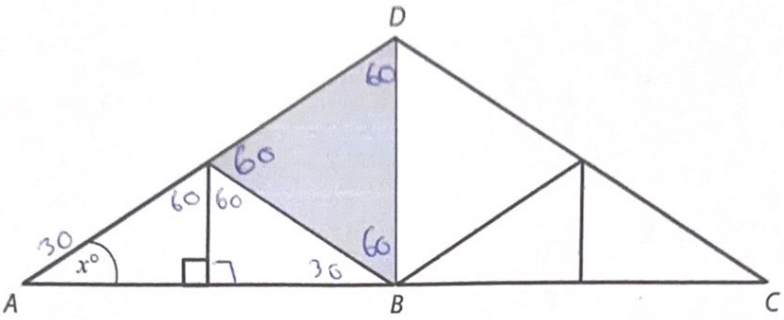
☑ (b) Use reverse calculations to check your answer.

(1)

116.666... x 6 = 700

(Total for Question 3 is 4 marks)

4 Samir is a roofer.
Here is a section of a roof made from straight pieces of wood.



Samir knows that

- the shaded triangle is an equilateral triangle
- the line *DB* is a line of symmetry
- the line *ABC* is a straight line
- the size of the angle marked $x°$ indicates the pitch of the roof.

The table shows information about the pitch and angle of a roof.

Pitch	Angle (°)
12	45
11	42.5
10	40
9	37
8	33.75
7	30
6	26.5
5	22.5
4	18.5
3	14
2	9.5
1	4.5
0	0

Find the value of x and use the table to give the pitch of the roof.

(3)

180 ÷ 3 = 60° (as we have an equilateral triangle)

180 − 60 − 90 = 30°

x = 30

pitch = 7

(Total for Question 4 is 3 marks)

5 Samir wants to work out the cost of the tiles needed to replace a roof.
The roof has 4 identical faces.

Each face is a triangle.
Each triangle has a base length of 7.6 m and a height of 4.8 m.

Samir has this information.

roof tiles

1 pack of tiles covers 13.8 m² (including overlaps)
each pack costs £716.10

Samir can only buy whole packs of these tiles.

Calculate the total cost of the tiles for the 4 faces of this roof.

(5)

Area of triangle: $\frac{7.6 \times 4.8}{2} = 18.24$

Area of roof: $4 \times 18.24 = 72.96$

Packs of tiles needed: $72.96 \div 13.8 = 5.286...$
≈ 6 packs

$6 \times 716.10 = 4296.60$

£ 4296.60

(Total for Question 5 is 5 marks)

6 Farah is buying clothes from a website.
The website shows this information about a jacket Farah wants to buy.

Jacket

original price £30.99
sale price £16

The website claims this is a saving of 46%.

Is the sale price a saving of 46% on the original price?
Show why you think this.

(3)

difference : 30.99 - 16 = 14.99

$\frac{14.99}{30.99} \times 100 = 48.37...\%$

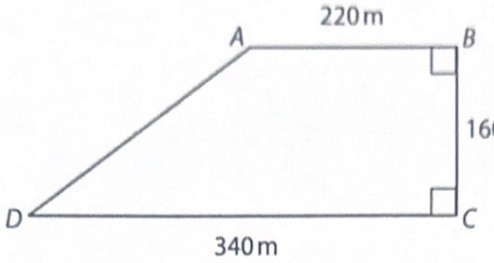
sale price is actually a saving of 48%.

No

(Total for Question 6 is 3 marks)

7 Here is a quadrilateral.

÷40 = 5.5

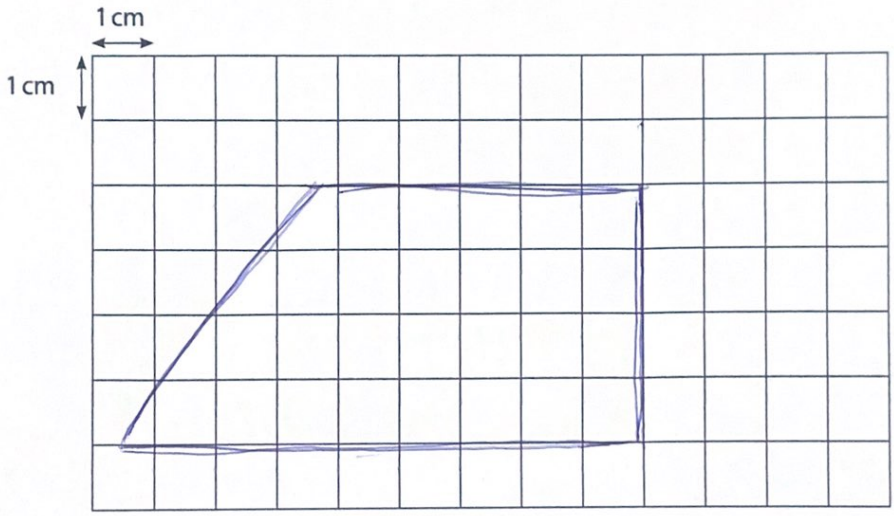


÷40 = 4

÷40 = 8.5

(a) Draw this shape on the grid.
Use the scale 1 cm to 40 m.

(2)



(b) Use your answer to part (a) to work out the actual length of the line *AD*.
Remember to use the grid and the scale.

(2)

5 cm × 40 = 200 m

200 m

(Total for Question 7 is 4 marks)

8 Pablo is investigating the relationship between the land area and the population of 8 European countries.

He has this information.

Country	Land area (1000 km²)	Population in 2018 (millions)
Germany	360	83
Greece	130	11
Italy	300	58
Poland	310	39
Spain	510	47
France	640	67
Romania	240	19
United Kingdom	240 ..... 242840 ≈ 240000	67 .....

Pablo finds out that the United Kingdom's
- land area is 93 400 square miles
- population in 2011 was 56.1 million
- population increased by 19.6% between 2011 and 2018

He wants to add this information to the table above.
He will round the land area to the nearest 10 000 and round the population to the nearest million.

Pablo knows
1 square mile = 2.6 km²

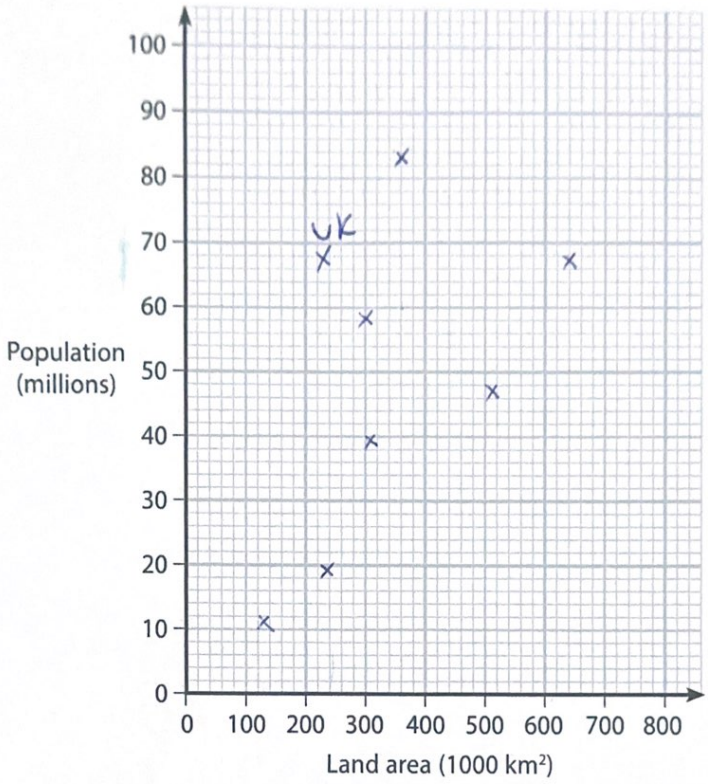
Draw a suitable graph and write a comment about the correlation.
Remember to complete the table and use the grid to draw your graph.

$93400 \text{ miles}^2 \times 2.6 = 242840 \simeq 240000$ (6)

$19.6\% = 0.196$

2018 population $= 56.1 \times 1.196$

$= 67.0956$ (million)



(Total for Question 8 is 6 marks)

9 Magda wants to compare the population density of the two largest countries in the world.

She can use this formula.

$$K = \frac{P}{2.59M}$$

K = population density (people per km²)

P = population (millions)

M = land area (million square miles)

Canada has a population density of 3.57 people per km²

Russia has

- a population of 143.96 million
- a land area of 6.593 million square miles.

Magda thinks that Russia has a greater population density than Canada.

Is Magda correct?
Show why you think this.

(3)

Russia: $K = \frac{143.96}{2.59 \times 6.593}$

$= 8.43...$

8.43 > 3.57

Yes, she is carect

(Total for Question 9 is 3 marks)

10 (a) Work out $3\frac{3}{8} - \frac{9}{8}$

Give your answer as a mixed number.

(2)

$3\frac{3}{8} \rightarrow \frac{3 \times 8 + 3}{8} = \frac{27}{8}$

$\frac{27}{8} - \frac{9}{8} = \frac{18}{8}$

$\frac{18}{8} \rightarrow 2\frac{2}{8} \rightarrow 2\frac{1}{4}$

$2\frac{1}{4}$

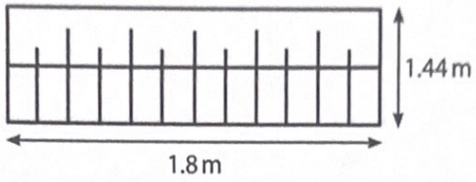
☑ (b) Use estimation to show a check of your answer.

(1)

$3\frac{1}{2} - 1 = 2\frac{1}{2}$ so my answer is correct

(Total for Question 10 is 3 marks)

11 Emilio makes metal fences.
He is making a fence using this design.



The fence will need

- 3 horizontal metal pieces of length 1.8 m
- 2 tall metal pieces of length 1.44 m
- 5 medium metal pieces
- 6 short metal pieces as shown on the diagram.

The heights of the tall, medium and short metal pieces are in the ratio 9:8:7

How many metres of metal in total does Emilio need to make the fence? (5)

tall : medium : short (heights)

9 : 8 : 7

1.44 : 1.28 : 1.12

1.44 ÷ 9 = 0.16

0.16 × 8 = 1.28

0.16 × 7 = 1.12

6 short → 6 × 1.12 = 6.72

5 medium → 5 × 1.28 = 6.4

2 tall → 2 × 1.44 = 2.88

6.72 + 6.4 + 2.88 + 3 × 1.8 = 21.4

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

21.4 m

(Total for Question 11 is 5 marks)

12 The table shows some information about 60 holidays bought by customers at a travel agency.

		Holiday type			
		Room only	**Bed and breakfast**	**All-inclusive**	**Total**
Customer type	**Couples**	3	13	18	34
	Families	2	10	14	26
	Total	5	23	32	60

(a) Complete the table above.

(2)

A customer who bought a holiday at the travel agency is chosen at random.

(b) What is the probability that this customer bought an all-inclusive holiday for a couple? Give your answer as a fraction in its simplest form.

(2)

$\frac{18}{60} \xrightarrow[\div 6]{} \frac{3}{10}$

$\frac{3}{10}$

The travel agent says

'Of the couples and families who bought holidays the couples were more likely to have bought an all-inclusive holiday.'

(c) Is the travel agent correct?
Show why you think this.

(2)

couples → $\frac{18}{34}$ = 0.529

families → $\frac{14}{26}$ = 0.538

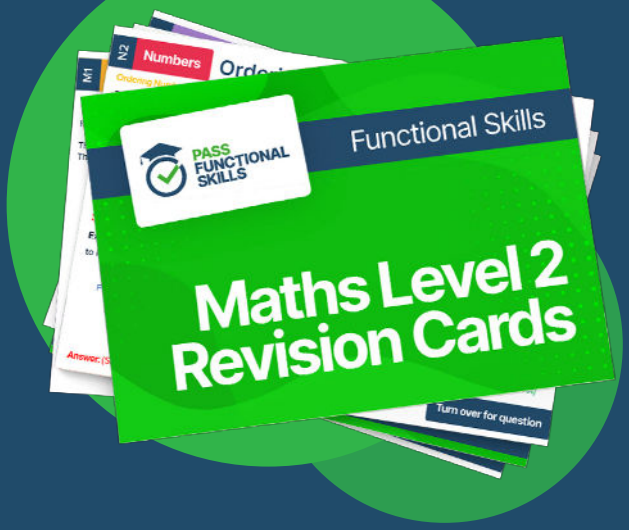
Incorrect, families more likely

(Total for Question 12 is 6 marks)

TOTAL FOR SECTION B IS 48 MARKS
TOTAL FOR PAPER IS 64 MARKS

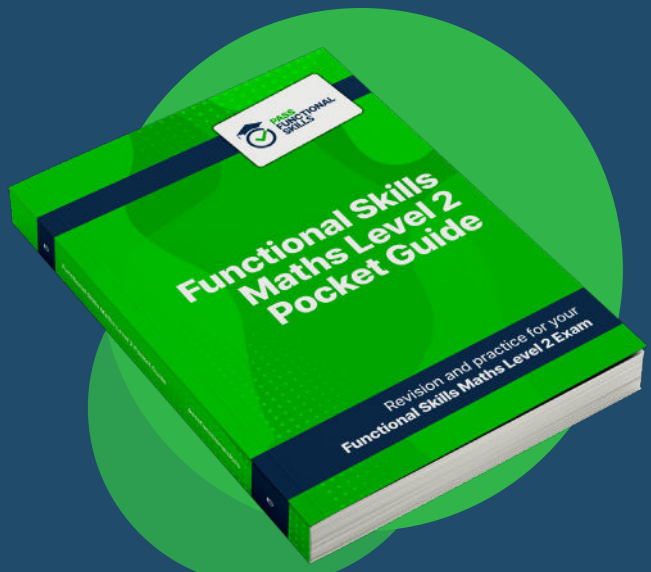
PASS FUNCTIONAL SKILLS

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