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Pearson Edexcel
Functional Skills

Past Paper 3**

Time: 25 minutes

Paper Reference **PMAT2/N03**

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 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 ▶

P 6 4 9 6 0 A 0 1 0 8

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FUNCTIONAL SKILLS ONLINE COURSES

PASS FUNCTIONAL SKILLS

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

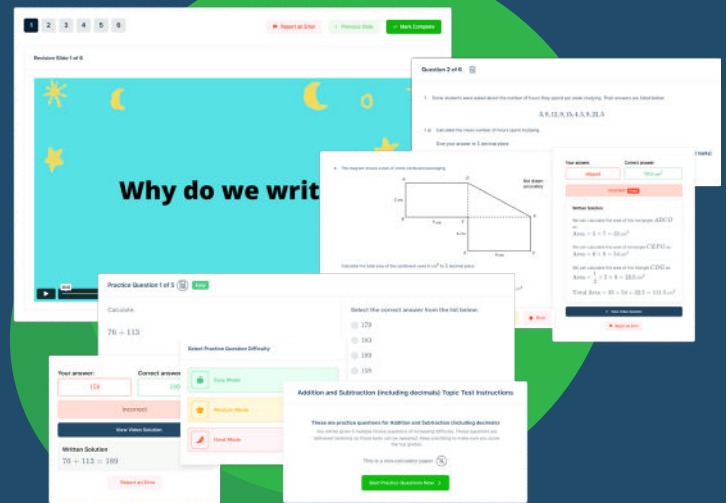Start Initial Assessment

✅ 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
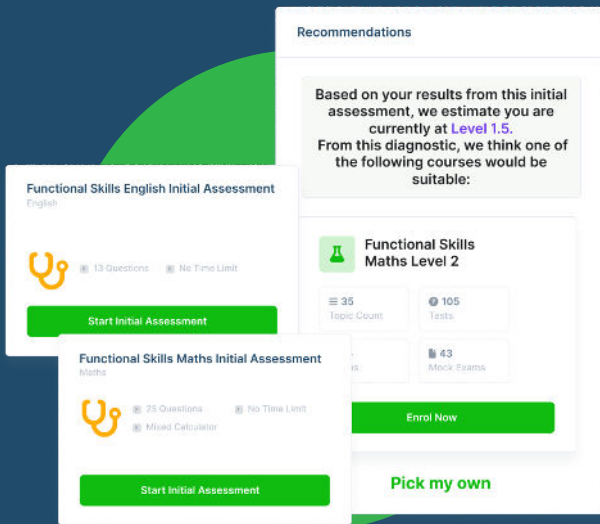
✅ Explainer videos on every topic

✅ 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
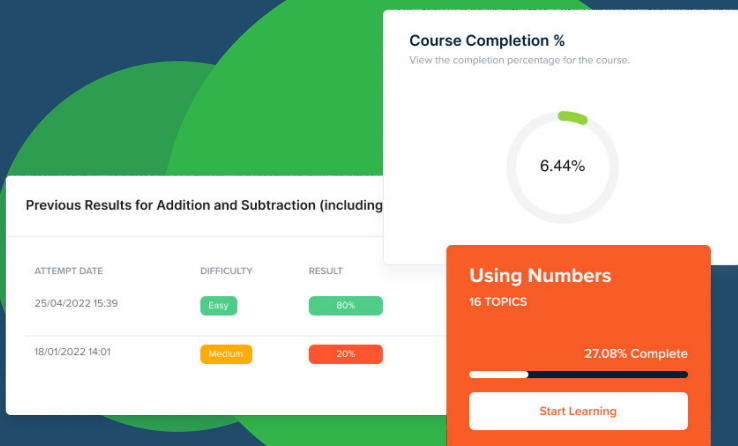
✅ See your progress through as you progress through each topic area

✅ 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

SECTION A

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

1 Kate is making some pastry.
   She will use 20 ounces of flour.

   Kate has a recipe that uses 8 ounces of flour with 3 ounces of butter.

   Work out how many ounces of butter Kate needs to use.

   (3)

   $20 \div 8 = 2.5$

   $2.5 \times 3 = 7.5$ (ounces of butter)

   | 7.5 | ounces |

   (Total for Question 1 is 3 marks)

P 6 4 9 6 0 A 0 3 0 8

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2

(a) Work out the value of $4x + 3$ when $x = 2$

(1)

$$4 \times 2 + 3 = 8 + 3 = 11$$

11

Here is a formula

$$A = 5\sqrt{B}$$

(b) Work out the value of A when B = 16

(2)

$$A = 5\sqrt{16} = 5 \times 4 = 20$$

20

(Total for Question 2 is 3 marks)

P 6 4 9 6 0 A 0 4 0 8

3

(a) Work out $\frac{5}{8}$ of 320

(2)

$$
\begin{array}{r}
040 \\
8\overline{)3^320}
\end{array}
$$

$40 \times 5 = 200$

200

Kanya makes and sells jewellery items.
In one week she sells earrings, bracelets and necklaces in the ratio 13:24:15

(b) What fraction of the total items sold were bracelets?
Give your answer in its simplest form.

(2)

$$
\begin{array}{ccc}
e & b & n \\
13 & : 24 & : 15
\end{array}
$$

$\dfrac{24}{52} = \dfrac{12}{26} = \dfrac{6}{13}$

$13 + 24 + 15 = 52$

$\dfrac{6}{13}$

(Total for Question 3 is 4 marks)

P 6 4 9 6 0 A 0 5 0 8

4   Paul sees this advert for a payment plan for a laptop.

Laptop payment plan

normal price £240

pay a deposit of £36 and £15 a month for 12 months

use our payment plan and save 8% of the normal price

(a) Does using the payment plan save 8% of the normal price?
You **must** show your working.

(5)

8% of 240 : $10\% = 24$

$1\% = 2.4$

$8\% = 24 - 4.8 = 19.2$

Therefore 8% off £240 $= £220.80$

Payment plan $= 36 + 15 \times 12$

$= 36 + 180$

$= £216$

NO, using the payment plan saves more than 8% of the normal price.

(b) Use estimation to check your calculation for the cost of the payment plan.

(1)

$$40 + 15 \times 10 = 190$$

(Total for Question 4 is 6 marks)

TOTAL FOR SECTION A IS 16 MARKS

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Signature: _____

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- **Calculators may be used.**
- If your calculator does not have a 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

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- Check your answers if you have time at the end.

Turn over ▶

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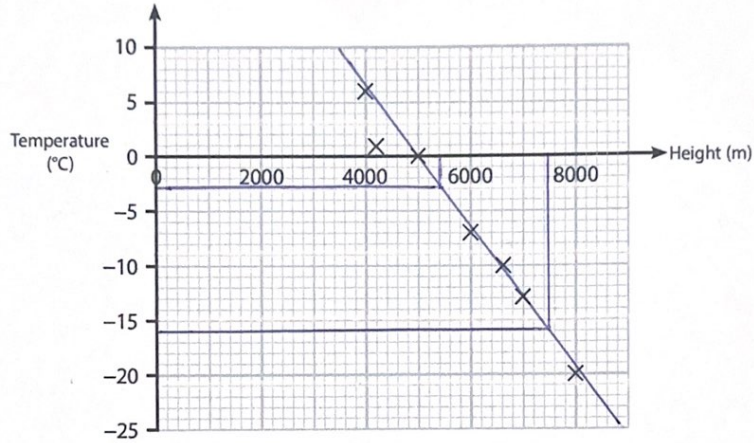**Answer ALL questions. Write your answers in the spaces provided.**

1   The scatter diagram shows the temperature at different heights on Mount Everest for one afternoon in May.

Temperature (°C)

10
5
0
−5
−10
−15
−20
−25

0   2000   4000   6000   8000   Height (m)

(a) Describe the relationship shown in this scatter diagram.

(1)

Negative correlation

There are camps on Mount Everest.

Base camp A is at a height of 5400 m.
Camp 3 is at a height of 7500 m.

(b) Use the scatter diagram to work out the difference in temperatures between the two camps.

(2)

$-16 - (-3) = -13$

$13°C$ *difference*

(Total for Question 1 is 3 marks)

P 6 4 9 6 1 A 0 2 2 0

2 Jenni is an editor for a newspaper.
She checks information in an article.

The article states, 'In 2019 there were 300 people per square kilometre in the UK.'

Jenny knows that in 2019

- the area of the UK was 242500 square kilometres
- the population of the UK was 66.9 million.

(a) Is the statement in the article correct?
Show why you think this.

(2)

$$66\,900\,000 \div 242\,500 = 275.87\ldots$$

NO, there are less than 300

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

(1)

$$275 \times 242\,500 = 66\,687\,500$$

(Total for Question 2 is 3 marks)

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3 Wesley is a salesman.

He wants to work out the total cost of the petrol he will use for travel next week.

Wesley knows

- he will drive a total of 520 miles
- his car uses 1 gallon of petrol per 28 miles
- petrol costs 128.4 pence per litre
- 1 gallon = 4.55 litres.

Wesley thinks the petrol he will use for travel next week will cost more than £100

Is Wesley correct?
Show why you think this.

(4)

$520 \div 28 = 18.57$ gallons of petrol

$18.57 \times 4.55 = 84.5$ litres

$84.5 \times £1.284 = £108.50$ (cost of petrol)

Yes, it will cost £108.50

(Total for Question 3 is 4 marks)

4 Anwar makes a playhouse for his children.

$130 \div 20 = 6.5$

$100 \div 20 = 5$
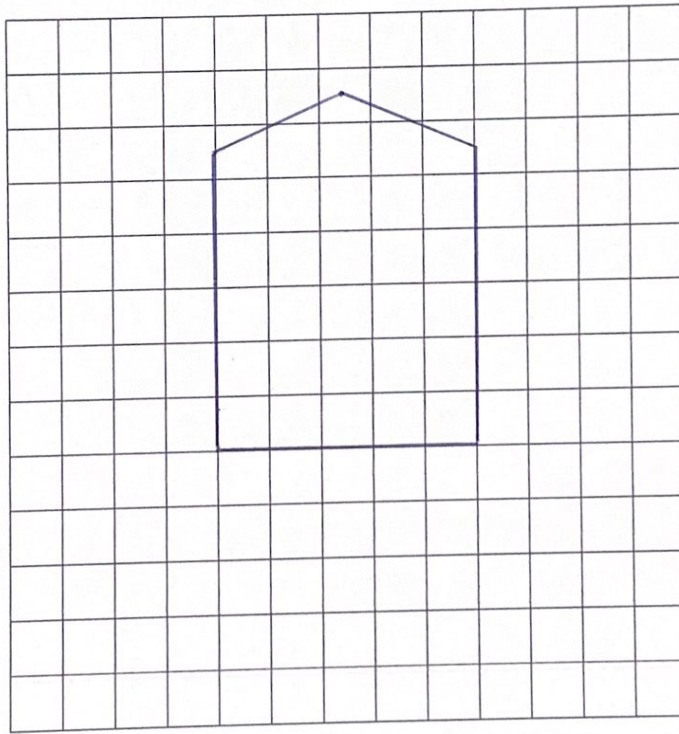
$110 \div 20 = 5.5$

130 cm

110 cm

120 cm

100 cm
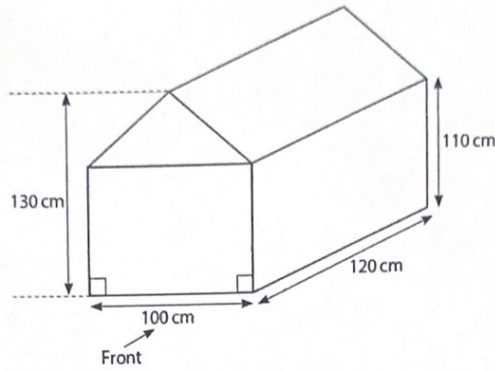
Front

The front elevation of the playhouse has one line of symmetry.

Draw the front elevation of the playhouse on the grid.
Use the scale 1:20

(3)

(Total for Question 4 is 3 marks)

5 In October Mr Barker gave a group of 250 students a history test.

These are the results.

Number of marks	Frequency	Midpoint	m × f
1 to 5	20	3	60
6 to 10	50	8	400
11 to 15	120	13	1560
16 to 20	60	18	1080
	250		3100

Mr Barker estimates the mean mark to be 12

(a) Is Mr Barker correct?
Show why you think this.

(3)

mean ≈ $3100 \div 250 = 12.4$

Mr Barker is correct.

In the October test the lowest mark was 2 and the highest mark was 17

In November the same students took a similar test.
The lowest mark was 5 and the highest mark was 18

Mr Barker wants to write a statement comparing the spread of marks in the two tests.

(b) Write a statement to compare the spread of marks in the two tests.
   You **must** show calculations to support your statement.

(2)

$17 - 2 = 15$

$18 - 5 = 13$

The range in October was greater than in November, so the scores were less consistent.

(Total for Question 5 is 5 marks)

P 6 4 9 6 1 A 0 7 2 0

6 Mia is the manager of an ice cream shop.
   In August she sold 960 ice lollies.
   In September she sold 810 ice lollies.

   Mia thinks she sold 18% fewer ice lollies in September than in August.

   Did Mia sell 18% fewer ice lollies in September than in August?

   (3)

   $$\frac{960 - 810}{960} \times 100 = 15.625\%$$ fewer ice lollies sold

   NO, 15.625% fewer were sold

   (Total for Question 6 is 3 marks)

P 6 4 9 6 1 A 0 8 2 0

7 Alex has two sets of four cards.
He writes a number on each card.

Alex picks one card from each set and multiplies the numbers to get a score.

The table shows some of the scores.

Card 1

×	−5	7	−9	11
2	−10	14	−18	22
4	−20	28	−36	44
−6	30	−42	54	−66
8	−40	56	−72	88

Card 2

(a) Complete the table.

(2)

Alex says,

'The probability that the score is negative is 0.5, which means there is a 5% chance that the score is negative.'

(b) Alex is incorrect.
Explain why.   0·5 = 50% not 5%

(1)

Alex picks one card from each set.
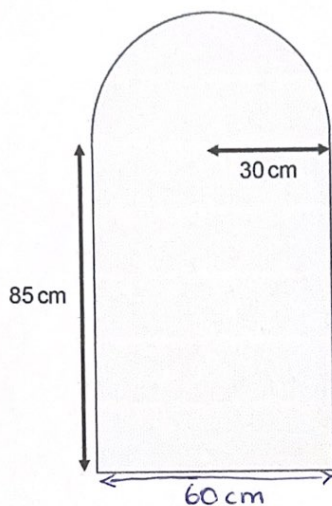
(c) What is the probability that the score is 14?

(1)

$\frac{1}{16}$

(Total for Question 7 is 4 marks)

8 Abi has a mirror in the shape of a rectangle with a semicircle on one of the shorter edges.
The radius of the semicircle is 30 cm.
The longer edge of the rectangle is 85 cm.

85 cm

30 cm

60 cm

Abi buys a 500 cm length of mirror trim to go around all the edges of the mirror.

She thinks she will use more than $\frac{2}{3}$ of the length of the mirror trim.

Is Abi correct?
Show why you think this.

(6)

curved section : $\frac{1}{2} \times 3.14 \times 60 = 94.2$

Perimeter of mirror $= 85 + 85 + 60 + 94.2$

$\qquad = 324.2$

$\frac{324.2}{500} = 0.6484 < \frac{2}{3} \left(\frac{2}{3} \text{ of } 500 \simeq 333.3 \right)$

No She will use less than $^2/_3$

P 6 4 9 6 1 A 0 1 0 2 0

(Total for Question 8 is 6 marks)

9 Karl plots 3 points on a grid.
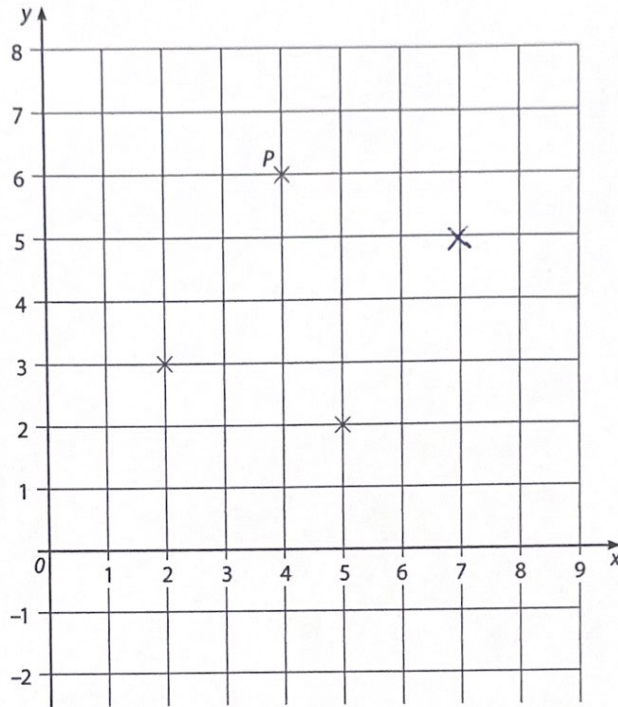
(a) Write down the coordinates of the point *P*.

(1)

(4 , 6)

Karl plots another point.
He joins the four points to make a parallelogram.

(b) Write down a possible set of coordinates for the fourth point.
   Plot the point on the grid.

(2)

(7 , 5)

(Total for Question 9 is 3 marks)

P 6 4 9 6 1 A 0 1 2 2 0

10 Andy and his brother set up eco cabins.
It takes the 2 of them 6 days to set up one eco cabin.

A friend starts working with them.

How many days will 3 people take to set up one eco cabin?

(3)

1 person = 2 × 6 = 12 days to set up

3 people = 12 ÷ 3 = 4 days

| 4 | days |

(Total for Question 10 is 3 marks)

11 Gavin is a car salesman.

The table shows the number of cars he sold in one week.

Mon	Tue	Wed	Thu	Fri	Sat
2	0	1	4	1	2

The cost of each car is £20 950

For every car Gavin sells he earns

- 1.25% of the cost of the car in commission
- a bonus of £50

Work out the median amount Gavin earned per day for this week.

(5)

median

$$0 \quad 1 \quad 1 \downarrow 2 \quad 2 \quad 4$$

median = 1·5 cars

1·5 × 20950 = 31425

0·0125 × 31425 = 392·8125 (commission)

1·5 × 50 = 75 (bonus)

392·8125 + 75 = £467·81
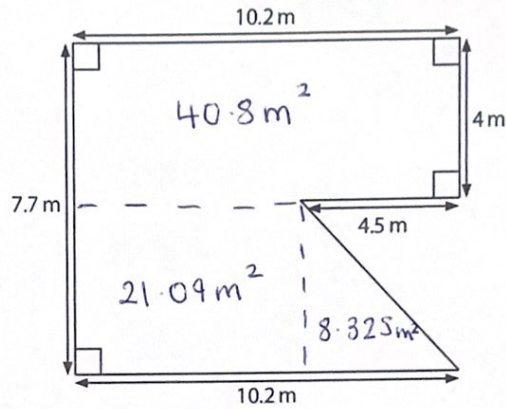
P 6 4 9 6 1 A 0 1 4 2 0

£ 467 81

(Total for Question 11 is 5 marks)

12 Maninder is the manager of a restaurant.
She wants to cover the floor of the restaurant with tiles.

This is a plan of the floor of the restaurant.

10.2 m

40.8 m^2

4 m

7.7 m

4.5 m

21.09 m^2

8.325 m^2

10.2 m

Maninder will buy the tiles in packs.
Each pack covers an area of 0.945 m²
One pack of tiles costs £16.15

Tiles can be cut and joined.

Work out the total cost of the packs of tiles Maninder will buy.

(6)

$$10.2 \times 4 = 40.8 \text{ m}^2$$

$$(7.7 - 4) \times (10.2 - 4.5) = 21.09 \text{ m}^2$$

$$\frac{1}{2} \times 4.5 \times 3.7 = 8.325 \text{ m}^2$$

$$\text{Area} = 40.8 + 21.09 + 8.325 = 70.215$$

$$70.215 \div 0.945 = 74.301\ldots \text{ packs}$$
$$\Rightarrow 75 \text{ packs needed}$$

$$75 \times £16.15 = £1211.25$$

£ 1211·25

(Total for Question 12 is 6 marks)

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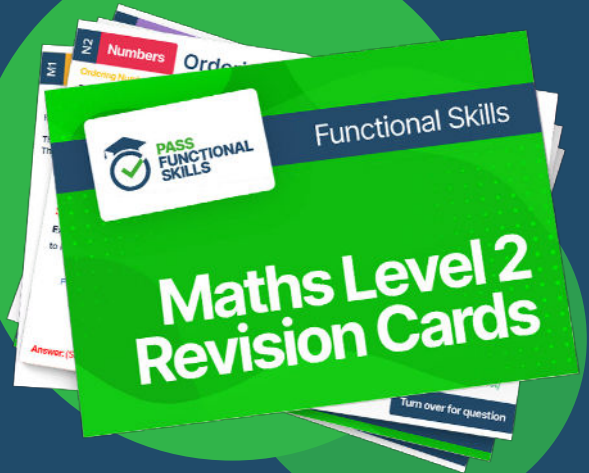**TOTAL FOR PAPER IS 64 MARKS**

P 6 4 9 6 1 A 0 1 7 2 0

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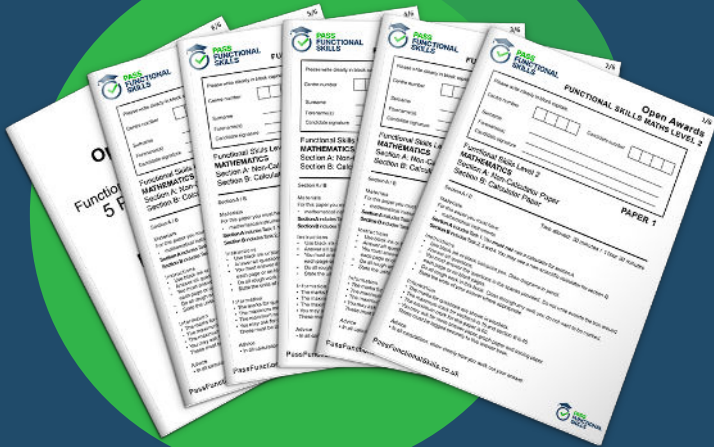
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