

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 10

Time: 25 minutes

Paper Reference **PMAT2/N10**

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 ►

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*****PRACTICE PAPER*****



PASS
FUNCTIONAL
SKILLS

FUNCTIONAL SKILLS ONLINE COURSES

The screenshot shows the platform's initial assessment section. It includes two main boxes: 'Functional Skills English Initial Assessment' (with 13 questions and no time limit) and 'Functional Skills Maths Initial Assessment' (with 25 questions, no time limit, and a mixed calculator option). Each box has a 'Start Initial Assessment' button. Below these are 'Recommendations' and a 'Suggested courses' section. The 'Functional Skills Maths Level 2' course is highlighted, showing 35 topic counts, 105 tests, and 43 mock exams. Other courses listed are 'Functional Skills English Level 2' and 'Functional Skills Maths Level 1'.

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

The screenshot shows the 'Course Completion %' section with a 6.44% completion rate. Below it is a table of 'Previous Results for Addition and Subtraction (including)' with two rows: one for an attempt on 25/04/2022 at 15:39 with an easy difficulty and 80% result, and another for 18/01/2022 at 14:01 with a medium difficulty and 20% result. To the right is a box for 'Using Numbers' with 16 topics and 27.08% completion, featuring a 'Start Learning' button.

- ✓ 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

The screenshot shows a math practice question titled 'Why do we write?'. It asks: 'Some students were asked about the number of hours they spent per week studying. Their answers are listed below. How many students had 10 hours or more? Give your answer to 1 decimal place.' Below the question is a graph of a trapezoid with a height of 8 cm and a top base of 5 cm. The area is calculated as $\frac{1}{2} \times (5 + 8) \times 8 = 52\text{ cm}^2$. The question is labeled 'Question 2 of 6'.

- ✓ 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) Write 50 as a fraction of 125
Give your answer in its simplest form.

(1)

$$\frac{50}{125} = \frac{10}{25} = \frac{2}{5}$$

$$\begin{array}{r} 2 \\ \hline 5 \end{array}$$

(b) Work out $18.17 + 4.398$
Remember to show your working.

(2)

$$\begin{array}{r} 18.17 \\ + 4.398 \\ \hline 22.568 \end{array}$$

$$22.568$$

(Total for Question 1 is 3 marks)

3

Turn over ►

2

Work out $5\frac{3}{4} - 2\frac{5}{8}$

Give your answer as a mixed number.

You **must** show your working.

(3)

$$\begin{aligned} & 5\frac{3}{4} - 2\frac{5}{8} \\ &= \frac{23}{4} - \frac{21}{8} \\ &= \frac{46}{8} - \frac{21}{8} \\ &= \frac{25}{8} \\ &= 3\frac{1}{8} \end{aligned}$$

$3\frac{1}{8}$

(Total for Question 2 is 3 marks)

DO NOT WRITE IN THIS AREA

3 Hana wants to buy a new washing machine. She will use one of these offers.

Offer A

24 monthly payments of £30

Offer B

normal price £954
now 22% off

Hana wants to spend the least amount of money.

Which offer should Hana use?
Show why you think this.

(4)

Offer A

$$24 \times £30 = £720$$

$$\begin{array}{r}
 24 \\
 \times 30 \\
 \hline
 720
 \end{array}$$

Offer B

$$\begin{array}{l}
 \text{10% of £954} = £95.40 \\
 \text{20% of £954} = £190.80
 \end{array}$$

$$\begin{array}{l}
 \text{1% of £954} = £9.54 \\
 \text{2% of £954} = £19.08
 \end{array}$$

$$\begin{aligned}
 22\% \text{ of £954} &= £190.80 + £19.08 \\
 &= £209.88
 \end{aligned}$$

$$\begin{aligned}
 \text{Offer price} &= £954 - £209.88 \\
 &= £744.12
 \end{aligned}$$

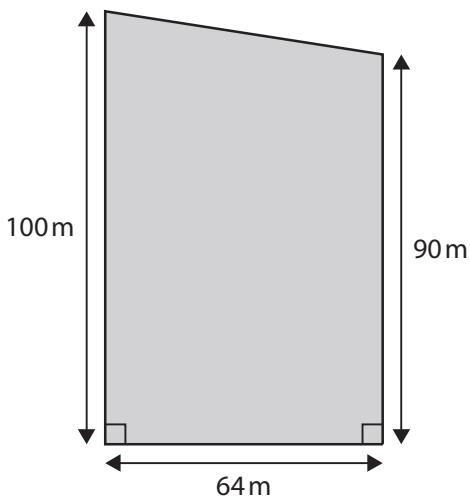
$$\begin{array}{r}
 954.12 \\
 - 209.88 \\
 \hline
 744.12
 \end{array}$$

Offer A is cheaper

(Total for Question 3 is 4 marks)

4 Jack is managing a concert.

The diagram shows the total floor space for the concert.



Jack receives £21 for each square metre of floor space from ticket sales.

He donates $\frac{1}{7}$ of the total he receives from ticket sales to a charity.

How much money does Jack donate to the charity?

You **must** show your working.

(6)

$$\begin{aligned} \text{Area} &= \frac{100 + 90}{2} \times 64 \\ &= \frac{190}{2} \times 64 \\ &= 95 \times 64 \\ &= 6080 \text{ m}^2 \end{aligned}$$

$$\begin{array}{r} 95 \\ \times 64 \\ \hline 380 \\ + 570 \\ \hline 6080 \end{array}$$

He makes $\text{£}21 \times 6080$

$$= \text{£}127,680$$

$$\begin{array}{r} 6080 \\ \times 21 \\ \hline 121600 \\ + 6080 \\ \hline 127680 \end{array}$$

He donates $\text{£}127,680 \div 7$

$$= \text{£}18,240$$

$$\begin{array}{r} 018240 \\ 7 \overline{)125680} \\ - 7 \\ \hline 56 \\ - 56 \\ \hline 0 \end{array}$$

DO NOT WRITE IN THIS AREA

£ 18,240

(Total for Question 4 is 6 marks)

TOTAL FOR SECTION A IS 16 MARKS

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Other names

Pearson Edexcel Functional Skills

Centre Number

Candidate Number

Past Paper 10

Time: 1 hour 30 minutes

Paper Reference **PMAT2/C10**

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

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Signature: _____

Instructions

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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

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

Turn over ▶

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P 6 8 4 7 8 A 0 1 2 0

?

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SECTION B

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

1 Marta and Aki want to move into a two-bedroom flat.
Marta will have the bigger bedroom.

The total monthly rent for the flat is £720
Marta and Aki will share the cost of the rent in the ratio 9 : 7

Marta thinks she will pay less than £400 a month in rent.

Is Marta correct?
Show why you think this.

$$9+7 = 16 \text{ parts}$$

(3)

$$16 \text{ parts} = £720$$

$$1 \text{ part} = £45$$

$$\begin{array}{rcl} \times 7 & & \times 7 \\ 7 \text{ parts} & & 9 \text{ parts} \\ £315 & & £405 \end{array}$$

\uparrow
Marta will pay
£405 a month
so she is wrong

No

(Total for Question 1 is 3 marks)

DO NOT WRITE IN THIS AREA

2 Ben is the manager of a mobile phone shop.

He starts to record the sales of mobile phones to 50 customers.

		Model		
		Mini	Regular	Maxi
Storage	64 GB	5	2	4
	128 GB	7	9	6
	256 GB	6	8	3

(a) Complete the table for Ben.

Total number of customers so far is:

$$5+2+4+7+9+6+6+8=47$$

So 3 more to make 50 customers

(1)

Ben selects at random one of the customers who bought a mini mobile phone.

(b) What is the probability that this customer bought a 128 GB mobile phone?

5+6+7=18 customers bought mini

of these, 7 bought 128 GB

(2)

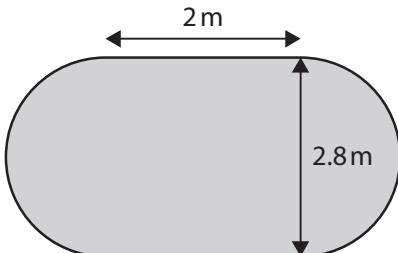
$$\text{so } \frac{7}{18}$$

$$\frac{7}{18}$$

(Total for Question 2 is 3 marks)

3 Emma hires a large tent for a party.

The diagram shows the shape of the ceiling of the tent.
The ceiling is made up of a rectangle and two semi-circles.



Emma wants to put a flower garland around the edge of the ceiling.

She has 40 feet in length of flower garland.

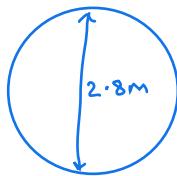
Use 1 metre = 3.3 feet

Does Emma have enough flower garland to go around the edge of the ceiling?

(4)

$$\text{Straight edges} = 2 + 2 = 4 \text{ m}$$

curved edges form circle



$$\text{circumference} = 3.14 \times 2.8 \\ = 8.792 \text{ m}$$

$$\text{Total perimeter} = 4 + 8.792 \\ = 12.792 \text{ m}$$

$$1 \text{ m} = 3.3 \text{ feet} \\ 12.792 \text{ m} = 42.2136 \text{ feet}$$

$\times 12.792$
She only has
40 feet so not enough

No

(Total for Question 3 is 4 marks)

DO NOT WRITE IN THIS AREA

4 Jake and Tia are preparing to take part in a 10 km race.

They both run 10 km each week for 6 weeks.

Jake records his times.

Week	1	2	3	4	5	6
Time (minutes)	65	59	62	56	58	66

Tia says,

"my median time is 61 minutes."

(a) Is Jake's median time greater than Tia's median time?

(2)

56 58 59 62 65 66
↑

$$\text{median} = \frac{59+62}{2}$$

$$= 60.5 \text{ No, not greater than Tia's}$$

No



(b) Show a check of your answer.

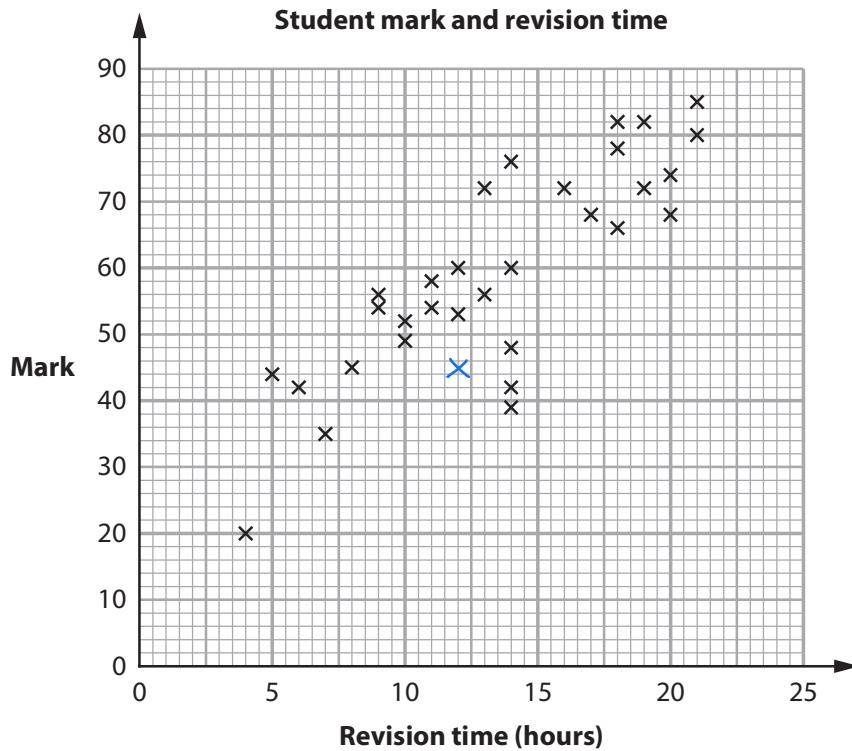
(1)

$$60.5 \times 2 = 121$$
$$= 59 + 62$$

(Total for Question 4 is 3 marks)

5 Ms Daly gives her students one week to prepare for a maths test.

The scatter diagram shows the number of hours spent on revision and the mark in the test for each of 31 students.



Another student revised for 12 hours and scored 45 marks on the test.

(a) Plot this point on the scatter diagram.

(1)

(b) What type of correlation does the scatter diagram show?

(1)

positive correlation

DO NOT WRITE IN THIS AREA

Ms Daly uses the scatter diagram to recommend how much revision time students need to get a high mark on the test.

(c) What percentage of the students who revised for more than 15 hours scored over 70 marks in the test?

(3)

11 students revised for over 15 hours

8 of these scored over 70

$$\frac{8}{11} \times 100 = 72.727\ldots\%$$

72.7%

(Total for Question 5 is 5 marks)

6 Alya is a baker.

In April she will use 400 kg of flour to make bread.

In May she plans to increase the amount of bread she makes by 14%
Alya needs to order the flour she needs to make the bread in May.

How much flour does Alya need to order to make the bread in May?

Increase by 14% is $100\% + 14\%$

$$= 114\%$$

$$= 1.14$$

So multiply by 1.14

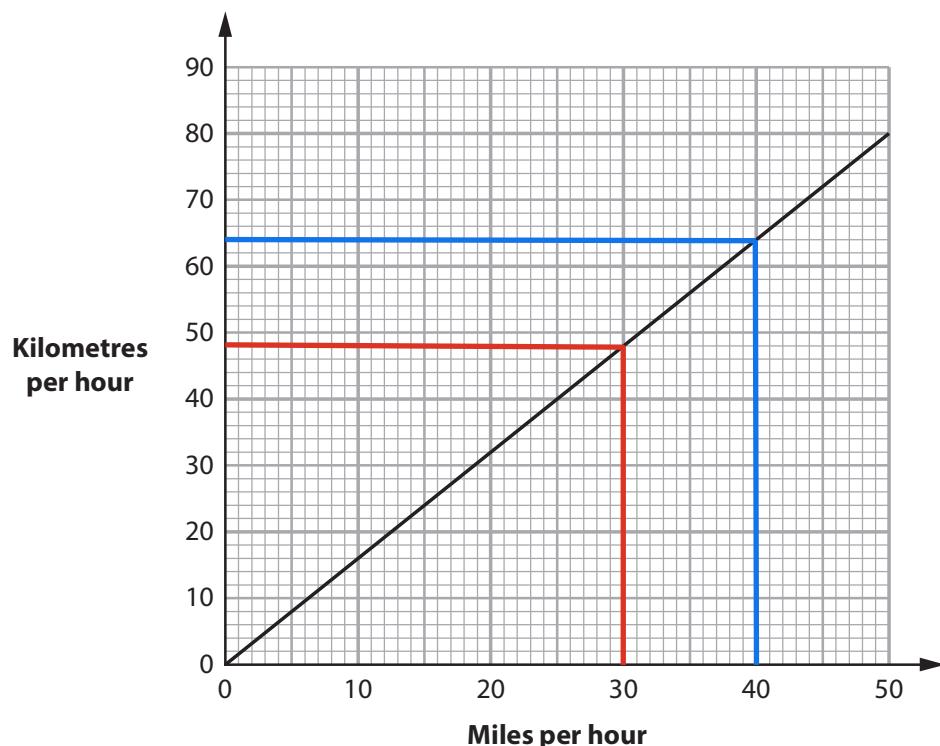
$$400 \times 1.14 = 456 \text{ kg}$$

456 kg

(Total for Question 6 is 3 marks)

DO NOT WRITE IN THIS AREA

7 This graph can be used to convert between miles per hour and kilometres per hour.



(a) Use the graph to complete the table.

(2)

Miles per hour	Kilometres per hour
30	48
40	64

Karim buys a new car.

The fuel tank of the car has a capacity of 62 litres.

He knows 1 gallon = 4.546 litres

(b) What is the capacity of this fuel tank in gallons?
Give your answer correct to 2 decimal places.

$$62 \div 4.546 = 13.63836\dots$$

(2)

13.64 gallons

(Total for Question 7 is 4 marks)

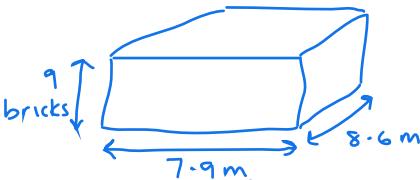
8 Amir is a builder.

He needs to work out how much it will cost him to build a wall.

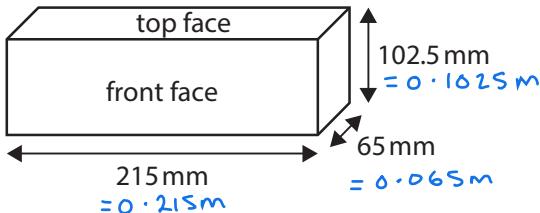
Amir uses this information to work out the number of bricks he needs.

The wall will be

- 7.9 m in length
- 9 bricks in height
- 8.6 m in width.



The bricks Amir will use are in the shape of a cuboid.



Amir has these prices for bricks.

Price per brick			
£1.50	£1.75	£1.68	£1.99
£1.65	£1.80	£1.49	£1.50

He uses the mode of these prices to work out the total cost of the bricks he needs for the wall.

Amir will also pay £75 for the other materials he needs to build the wall.

Work out the total cost of the bricks and other materials for Amir.

mode = £1.50 per brick

(6)

length: $7.9 \div 0.215 = 36.744\ldots$ so 37 bricks long

width: $8.6 \div 0.065 = 132.307\ldots$ so 133 bricks wide

height: 9 bricks tall

So he needs $37 \times 133 \times 9 = 44,289$ bricks

bricks will cost $\text{£1.50} \times 44,289 = \text{£66,433.50}$

Total cost is $\text{£66,433.50} + \text{£75}$

$= \text{£66,508.50}$

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£66,508 - 50

(Total for Question 8 is 6 marks)

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P 6 8 4 7 8 A 0 1 1 2 0
PRACTICE PAPER

9 Craig works on a building site.

He knows it takes 2 bricklayers 3 hours to lay a total of 450 bricks.

On Monday there are 5 bricklayers at the building site.

All the bricklayers work at the same rate.

How much time would it take 5 bricklayers to lay a total of 450 bricks?

Give your answer in hours.

(3)

$$\begin{aligned} & \div 2 \left(\begin{aligned} & 2 \text{ bricklayers} \rightarrow 3 \text{ hours} \\ & \downarrow \\ & 1 \text{ bricklayer} \rightarrow 6 \text{ hours} \end{aligned} \right) \times 2 \\ & \times 5 \left(\begin{aligned} & 5 \text{ bricklayers} \rightarrow 1.2 \text{ hours} \\ & \downarrow \end{aligned} \right) \div 5 \end{aligned}$$

1.2 hours

(Total for Question 9 is 3 marks)

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10

(a) Work out the value of $\left(\frac{13.608}{3.24}\right)^2$

(2)

$$\begin{aligned} &= 4 \cdot 2^2 \\ &= 4 \cdot 2 \times 4 \cdot 2 \\ &= 17.64 \end{aligned}$$

17.64

(b) Write $\frac{3}{8}$ as a decimal.

(1)

$$3 \div 8 = 0.375$$

0.375

(Total for Question 10 is 3 marks)

11 Ben is the manager of a leisure centre.
He has this formula to work out the volume of the water in the pool.

$$V = 10dw + 15aw$$

where

V = the volume of the water in the pool (m^3)

d = the depth of the water at the deep end of the pool (m) $= 2\text{ m}$

w = width of the pool (m) $= 12\text{ m}$

a = the depth of the water at the shallow end of the pool (m) $= 1.5\text{ m}$

Ben knows the width of the pool is 12 m.

The depth of the water at the deep end is 2 m.

The depth of the water at the shallow end is 1.5 m.

Ben uses two water pumps at the same time to empty the pool.

Pump A empties water at a rate of 31.2 m^3 per hour.

Pump B empties water at a rate of 27 m^3 per hour.

Ben thinks that using the two water pumps will empty the pool in less than 9 hours.

Is he correct?

Show why you think this.

$$\begin{aligned} \text{Volume} &= 10 \times 2 \times 12 + 15 \times 1.5 \times 12 \\ &= 240 + 270 \\ &= 510 \text{ m}^3 \end{aligned}$$

(5)

Together, pumps empty $31.2 + 27 = 58.2 \text{ m}^3$ water per hour

In 9 hours, will pump $58.2 \times 9 = 523.8 \text{ m}^3$ water

Only 510 m^3 in the pool, so yes, will take less than 9 hours

DO NOT WRITE IN THIS AREA

Yes

(Total for Question 11 is 5 marks)

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P 6 8 4 7 8 A 0 1 5 2 0
PRACTICE PAPER

12 Ricardo gets a new job at a leisure centre.
He records the number of visits of 50 clients in August.

Number of visits	Frequency	mid point	mid point \times freq
1 to 7	8	4	$4 \times 8 = 32$
8 to 14	24	11	$11 \times 24 = 264$
15 to 21	12	18	$18 \times 12 = 216$
22 to 28	6	25	$25 \times 6 = 150$
Total	50		total 662

Ricardo works out an estimate for the mean number of visits by these clients in August.

His manager tells him this is a 16% increase on the mean number of client visits in July.

(a) What was the mean number of client visits in July?

$$\text{mean in August} = 662 \div 50 \\ = 13.24$$

(5)

$$16\% \text{ increase is } 100\% + 16\% \\ = 116\% \\ = 1.16$$

$$\text{So mean in July is } 13.24 \div 1.16 = 11.41\dots$$

DO NOT WRITE IN THIS AREA

11.41



(b) Use a reverse calculation to show a check of your estimated mean.

(1)

$$13.24 \times 50 = 62$$

(Total for Question 12 is 6 marks)

TOTAL FOR SECTION B IS 48 MARKS

TOTAL FOR PAPER IS 64 MARKS

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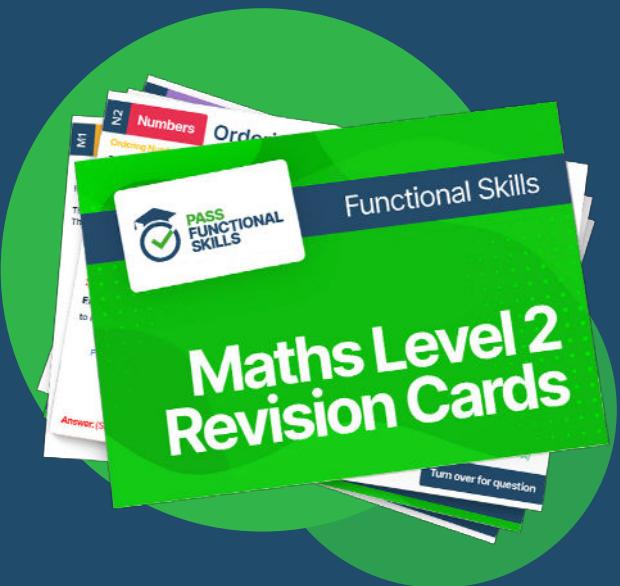
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