Please check the examination details below before entering your candidate information

Candidate surname	Other names

Pearson Edexcel Functional Skills

Centre Number	Candidate Number

Set 9

Time: 25 minutes | Paper Reference **PMAT2/N09**

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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1/1/1

Pearson

Please note that these worked solutions have neither been provided nor approved by Pearson Education and may not necessarily constitute the only possible solutions. Please refer to the original mark schemes for full guidance.

Any writing in blue should be written in the exam.

Anything written in green in a rectangle doesn't have to be written in the exam.

If you find any mistakes or have any requests or suggestions, please send an email to curtis@cgmaths.co.uk

SECTION A

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

1 Shannan has a new car.

The petrol tank has a maximum capacity of 48 litres.
The cost of petrol is 126.7p per litre.

Shannan thinks it will cost less than £70 to completely fill an empty tank with petrol.

Use **estimation** to check if Shannan is correct.
You **must** show your working.

(3)

130
× 50
6500 ÷ 100 = 65
1

Rounding the 48 litres to 50 litres and rounding the 126.7p to 130p. Multiplying the 130p by the 50 litres works out an overestimate of the cost in pence to completely fill an empty tank with petrol. There is 100p in £1 so dividing the 6500p by 100 converts it to £65

£65 is an overestimate as both the 48 litres and 126.7p were rounded up. So the actual cost must be less than £70 → Yes

(Total for Question 1 is 3 marks)

2 Henry is designing the car park for a new shopping centre.
The total number of parking spaces at the shopping centre will be 900

150 of the parking spaces will be for staff.
The rest of the parking spaces will be for visitors.

Henry wants 6% of the visitor parking spaces to be parking spaces for disabled visitors.

Work out the number of parking spaces for disabled visitors in this car park.

(3)

$$\begin{array}{r} {}^{8}\cancel{9}{}^{1}0\,0 \\ -\,1\,5\,0 \\ \hline 7\,5\,0 \end{array} \div 100$$

Subtracting the 150 spaces for staff from the 900 spaces works out that there are 750 spaces for visitors

Dividing the 750 spaces for visitors by 100 works out that 1% of the visitor spaces is 7.5

$$\begin{array}{r} 7.5 \\ \times\ 6 \\ \hline 45.0 \end{array}$$

Multiplying the value of 1% by 6 works out that 6% of the visitor spaces is 45

45

(Total for Question 2 is 3 marks)

3 Here is a list of numbers.

Writing each number to 3 decimal places by putting 0s at the end of some of the numbers makes them easier to compare

12.960 12.096 12.900 12.450 12.100 12.738 12.620

(a) Find the median.

(2)

12.096, 12.1, 12.45, 12.62, 12.738, 12.9, 12.96

Putting the numbers in order from smallest to largest then underlining from both ends until the number in the middle is found

12.62

(b) Work out $\frac{7}{8} - \frac{3}{5}$

You **must** show your working.

(2)

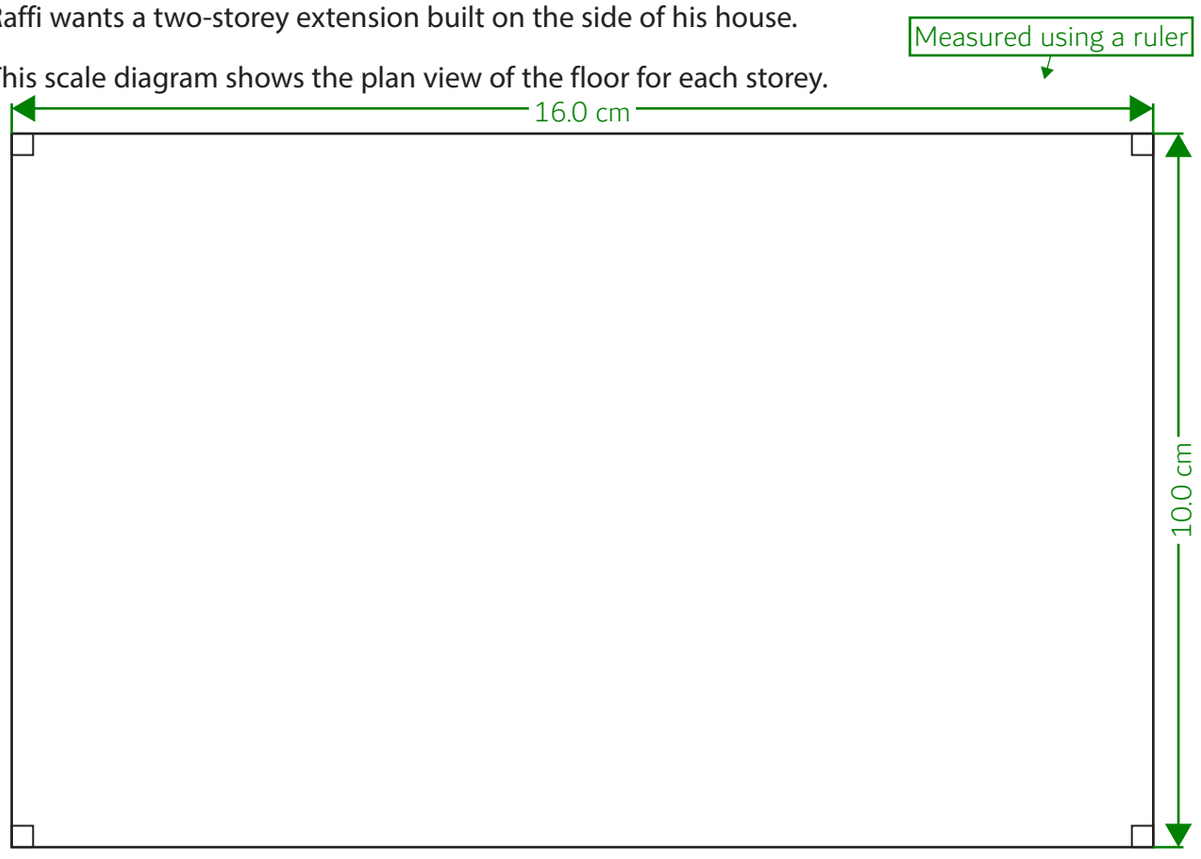
$\frac{35}{40} - \frac{24}{40}$ ← Multiplying both the numerator and denominator of the first fraction by 5 and multiplying both the numerator and denominator of the second fraction by 8 so that the denominators of both fractions are the same

The numerators can be subtracted and the denominator stays the same → $\frac{11}{40}$

(Total for Question 3 is 4 marks)

4 Raffi wants a two-storey extension built on the side of his house.

This scale diagram shows the plan view of the floor for each storey.



Scale 1 : 50

Raffi looks at the websites for different builders.

The table shows the cost per m^2 to build a one-storey extension.

Builder	A	B	C	D	E	F	G	H
Cost per m^2 (£)	1300	1350	1300	1325	1300	1340	1350	1290

Raffi will use the mode of these costs to help work out the expected cost to build this two-storey extension.

He also knows that the cost per m^2 to build a two-storey extension is $1\frac{1}{2}$ times the cost per m^2 to build a one-storey extension.

Work out the expected cost to build the two-storey extension for Raffi.
You **must** show your working.

(6)

$$\begin{array}{r} 0\ 6\ 5\ 0 \\ 2\overline{)\,1\ {}^{1}3\ {}^{1}0\ 0} \end{array}$$

£1300 is the mode as this is the amount which appeared the most. Dividing it by 2 to work out that 1/2 of it is £650

$$\begin{array}{r} 1300 \\ +\ 650 \\ \hline 1950 \end{array}$$

Adding the £650 to the £1300 works out that $1^{1}/_{2}$ times the cost per m^2 to build a one-storey extension is £1950 per m^2, which is the cost per m^2 to build a two-storey extension

$$\begin{array}{r} 16 \\ \times\ 50 \\ \hline {}_{3}800 \end{array} \div 100 = 8$$

Multiplying the 16 cm measured on the diagram by 50 works out that the actual length is 800 cm. There are 100 cm in 1 m so dividing this by 100 converts it to 8 m

10×50

Multiplying the 10 cm measured on the diagram by 50 works out that the actual width is 500 cm

$500 \div 100$

There are 100 cm in 1 m so dividing the 500 cm by 100 converts it to 5 m

8×5

Area of rectangle = length × width. So the area of the floor for each storey is 40 m^2

$$\begin{array}{r} 1950 \\ \times\ 40 \\ \hline {}_{3\ 2}78000 \end{array}$$

Multiplying the £1950 per m^2 by the 40 m^2 works out the cost of the extension

£ 78000

(Total for Question 4 is 6 marks)

TOTAL FOR SECTION A IS 16 MARKS