

Please check the examination details below before entering your candidate information

Candidate surname

Other names

**Pearson Edexcel
Functional Skills**

Centre Number

Candidate Number

Set 7

Time: 25 minutes

Paper Reference **PMAT2/N07**

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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.CG Maths.
Worked Solutions


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 Here is some data.

146 97 109 97 141 146 103 97 94 94

(a) Find the mode of this data.

(1)

97 appears the most so 97 is the mode

97

(b) Work out $17.456 - 6.072$

Show your working.

(2)

$$\begin{array}{r} 17.456 \\ - 6.072 \\ \hline 11.384 \end{array}$$

11.384

(Total for Question 1 is 3 marks)

2

Work out $2\frac{5}{6} + 9\frac{1}{3}$

Give your answer as a mixed number.

You **must** show your working.

(3)

$$2 + 9 = 11 \leftarrow \text{First dealing with the whole numbers}$$

$$\frac{5}{6} + \frac{2}{6} \leftarrow \text{Next dealing with the fractions. Multiplying both the numerator and denominator of } 1/3 \text{ by 2 to make it } 2/6 \text{ so that it has the same denominator as } 5/6$$

$$\frac{7}{6} \leftarrow \text{Adding the numerators and the denominator stays the same}$$

$$1\frac{1}{6} + 11 \leftarrow \text{Converting to a mixed number by dividing the numerator (7) by the denominator (6). The 1 is the whole number and the remainder of 1 is left in the fraction. Then adding the 11}$$

$$12\frac{1}{6}$$

(Total for Question 2 is 3 marks)

- 3 Lara wants to join a cycling club.
The club website states that the average speed of club rides is 15 miles per hour.

Lara goes on a ride to work out her average speed.
She rides 60 km in 3 hours.

$$1 \text{ mile} = 1.6 \text{ km}$$

Lara thinks that her average speed is lower than the average speed of club rides.

- (a) Is she correct?
Show why you think this.

(3)

$$60 \div 3 = 20$$

Working out Lara's average speed in kilometres per hour, which means to divide the distance in kilometres by the time in hour. So Lara's average speed is 20 kilometres per hour

$$\begin{array}{r} 15 \\ \times 16 \\ \hline 90 \\ 150 \\ \hline 240 \end{array}$$

Multiplying 15 miles by 1.6 converts it to kilometres. Ignoring the decimal and doing 15×16

$$15 \times 1.6 = 24$$

There was 1 decimal place in the 1.6 so bringing the decimal point back once works out that $15 \times 1.6 = 24$. So the average speed of club rides is 24 kilometres per hour

Lara's speed of 20 kilometres per hour is less than the 24 kilometres per hour average speed of club rides

Yes



- (b) Show a check of your answer.

(1)

$$20 \times 3 = 60$$

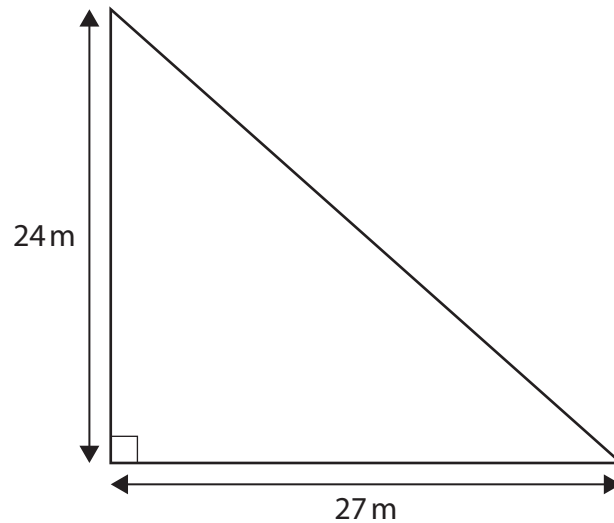
$$24 \div 1.6 = 15$$

Doing reverse calculations to go back from what was worked out to the original data

(Total for Question 3 is 4 marks)

- 4 Bart is the manager at a building site.
He needs to lay a concrete foundation.

The diagram shows the ground space for the concrete foundation.



The depth of concrete will be 0.3 m

Concrete is delivered in concrete mixer trucks.
Each mixer truck holds 6 m^3 of concrete.

How many mixer trucks of concrete does Bart need in total for the concrete foundation?

(6)

$$24 \div 2$$

Area of triangle = (base $\times$ height) $\div$ 2. The height is 24 m. First dividing the height by 2

$$\begin{array}{r} 12 \\ \times 27 \\ \hline 84 \\ 240 \\ \hline 324 \\ \times 3 \\ \hline 972 \end{array}$$

Next multiplying half the height by the base. The 27 m is the base. So the area of the triangle is 324 m^2

Multiplying the area of the triangle by the depth works out the volume of concrete needed. Ignoring the decimal in the 0.3 and instead multiplying by 3

$$6 \overline{) 972} \begin{array}{l} 162 \\ \hline \end{array}$$

There is 1 decimal place in 0.3 so bringing the decimal point in 972 back once works out that $324 \times 0.3 = 97.2 \text{ m}^3$. Then dividing the volume of the concrete by the 6 m^3 each mixer truck holds works out that 16.2 mixer trucks are needed

There needs to be a whole number of mixer trucks.
16 is not enough so it must be rounded up to 17

17

(Total for Question 4 is 6 marks)

TOTAL FOR SECTION A IS 16 MARKS