



Rewarding Learning

General Certificate of Secondary Education
November 2025

Centre Number

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Candidate Number

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Mathematics

Unit M6 Paper 1
(Non-Calculator)

Foundation Tier

[GMC61]



GMC61

THURSDAY 20 NOVEMBER, 9.15am–10.15am

TIME

1 hour.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

You must answer the questions in the spaces provided.

Do not write outside the boxed area on each page, on blank pages or tracing paper.

Complete in black ink only. **Do not write with a gel pen.**

Questions which require drawing or sketching should be completed using an HB pencil. All working **must** be clearly shown in the spaces provided. Marks may be awarded for partially correct solutions.

You **must not** use a calculator for this paper.

Answer **all nineteen** questions.

INFORMATION FOR CANDIDATES

The total mark for this paper is 50.

Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

You should have a ruler, compasses and a protractor.

The Formula Sheet is on page 2.

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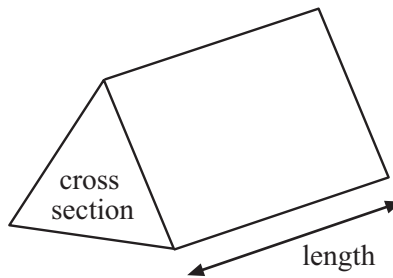
24GMC6101

Formula Sheet

$$\text{Area of trapezium} = \frac{1}{2}(a + b)h$$



$$\text{Volume of prism} = \text{area of cross section} \times \text{length}$$





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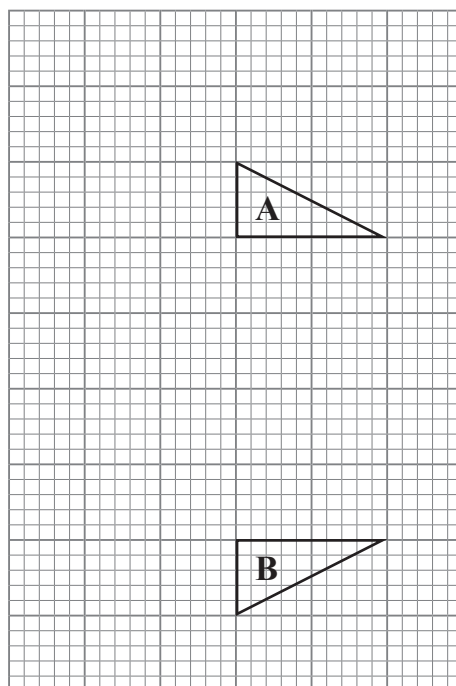
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24GMC6103

1 (a) Triangle A is reflected and its image labelled B.

Draw the mirror line on the grid.

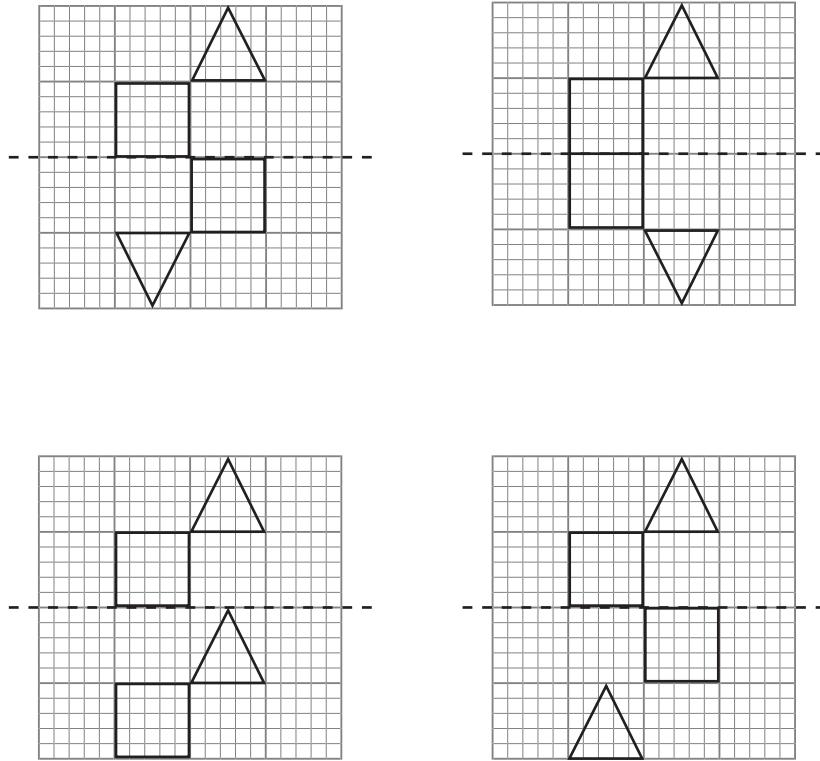


[1]



(b) Which one of the reflections is correct?

Circle your answer.



[1]



2 There are 11 boys and 14 girls in a class.

(a) One student is chosen at random from the class.

What is the probability that a girl is chosen?

Give your answer as a fraction.

Answer _____ [1]

(b) The probability that a student in the class has a mobile phone is $\frac{4}{5}$

How many students in the class have a mobile phone?

Answer _____ [1]



3 Jonah's dad is 40 years old.

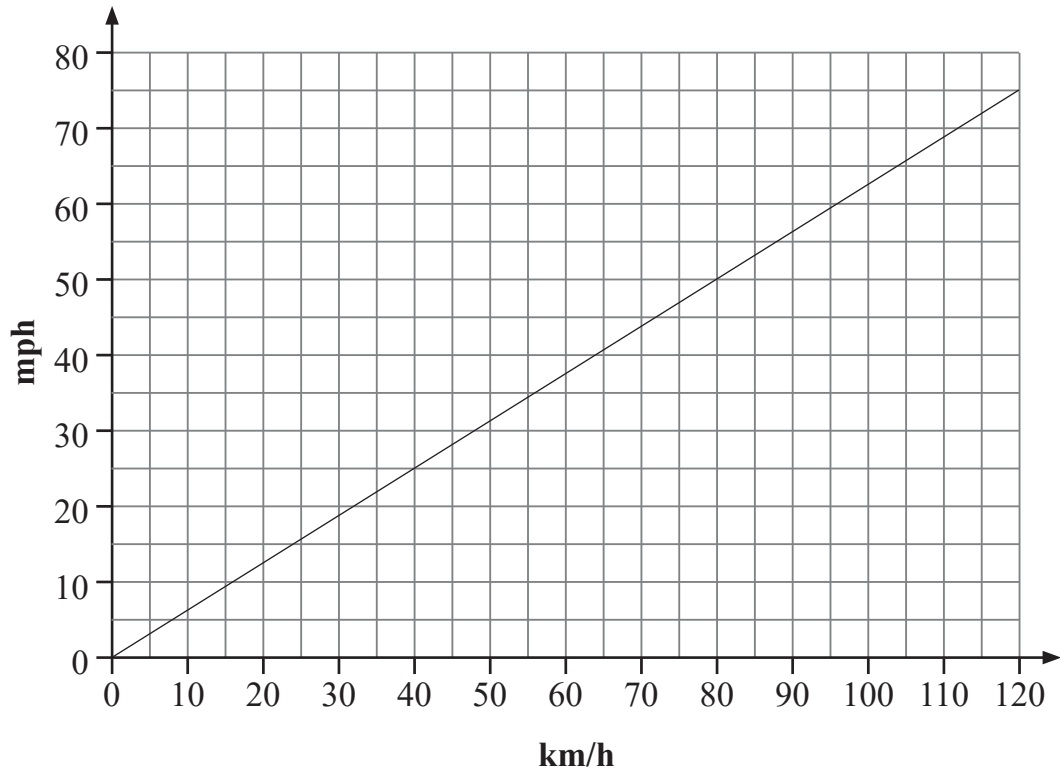
Jonah is a fifth of his dad's age.

What will be the difference in their ages in 6 years' time?

Answer _____ years [3]



4



The take-off speed of a jet is 240 kilometres per hour (km/h).

Use the graph to find the take-off speed of this jet in miles per hour (mph).

Answer _____ mph [2]



5 Estimate the value of

(a) $(20.3)^2$

Answer _____ [1]

(b) $\sqrt{103}$

Answer _____ [1]



6 Pat's car journey took 7 hours.

She spent 15% of the journey stopped at service stations.

How many **minutes** of the journey were spent driving?

Show your working out clearly.

Answer _____ minutes [4]



7 (a) Fill in the two missing numbers in this sequence.

_____ , 1, 6, 13, 22, 33, _____ [2]

(b) Each new number in a different sequence is found by using the rule

“Square the previous term and add 7”

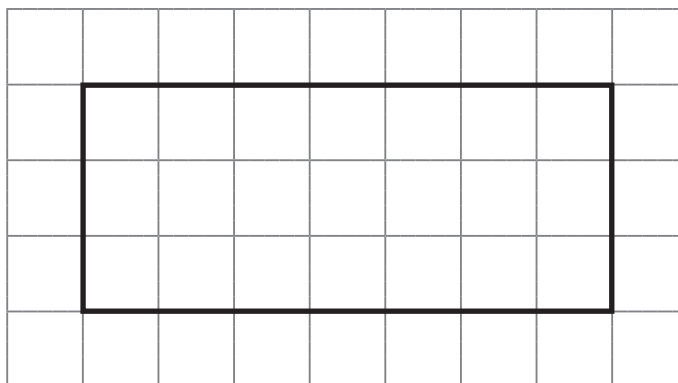
The first term is 3

Find the second term.

Answer _____ [1]



8 This is a scale drawing of the floor of Jacob's warehouse.



The scale is $1 \text{ cm} = 5 \text{ m}$

Work out the actual perimeter of the floor of the warehouse.

Answer _____ m [3]



9 Jenny has some tins of soup.

4 are lentil

6 are lentil and bacon

3 are chicken

One tin is taken at random.

What is the probability of taking a tin which

(a) is chicken, _____ [1]

(b) is mushroom, _____ [1]

(c) contains lentils? _____ [1]

10 The ratio of flour to sugar is 7 : 6 in a recipe.

There are 180 grams of sugar.

How many grams of flour are there?

Answer _____ grams [2]

[Turn over

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24GMC6113

11 Chloe goes on holiday.

She spends $\frac{3}{7}$ of her time at the beach.

She spends 25% of her time sightseeing.

The rest of her time is spent at the hotel.

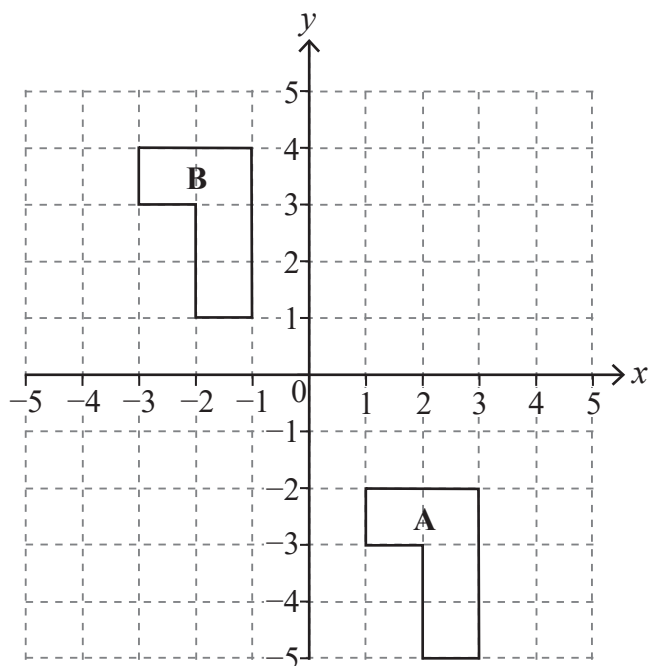
What **fraction** of Chloe's time is spent at the hotel?

Show your working out clearly.

Answer _____ [3]



12 Describe fully the single transformation that maps B to A.



Answer _____ [2]

13 The length of a sports pitch is 92 m to the nearest metre.

Write down the shortest possible length of the sports pitch.

Answer _____ m [1]

[Turn over



14 Find the sum of the angles in the polygon ABCDEFGH.

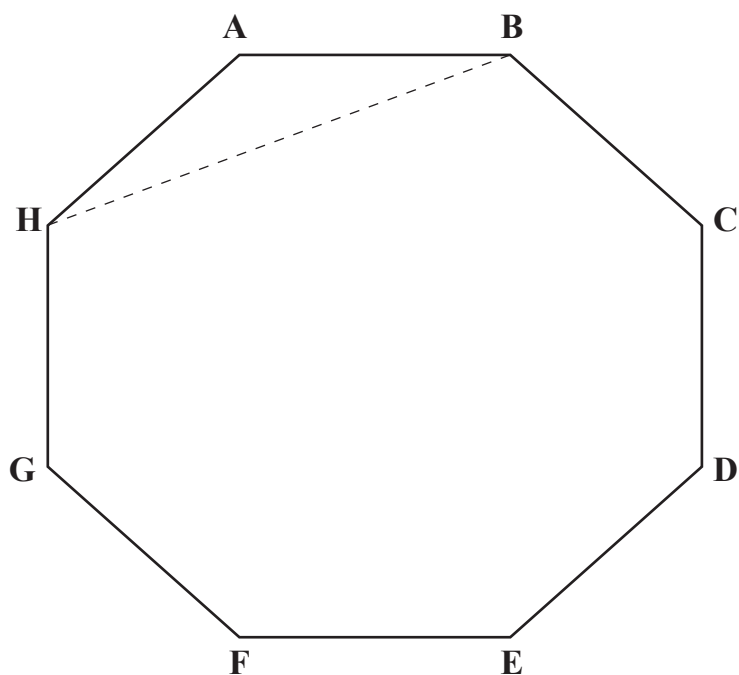


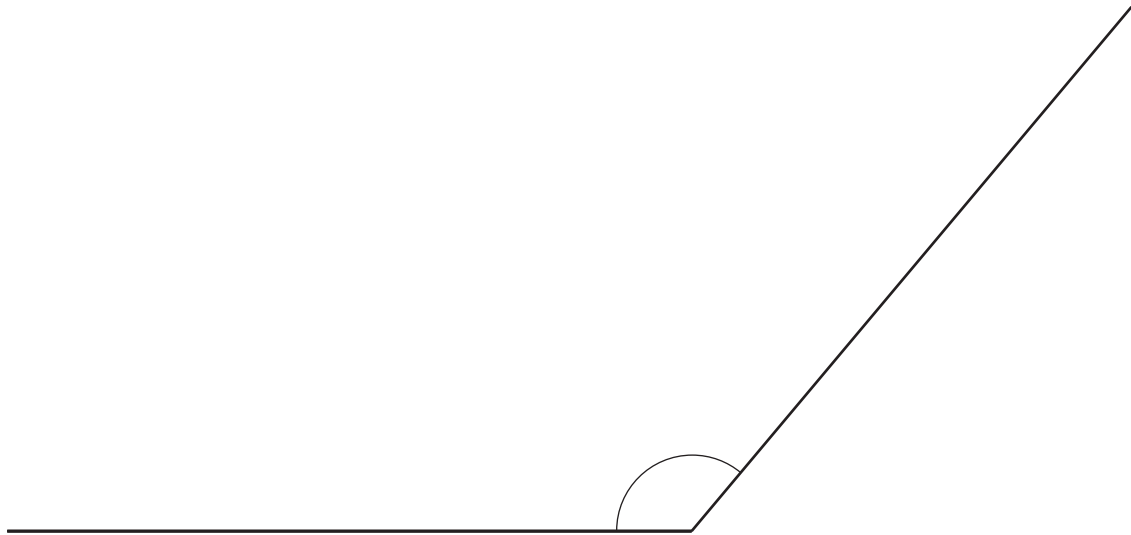
diagram not drawn accurately

Answer _____ ° [3]



15 Use a ruler and compasses to construct the bisector of the angle.

You must show all your construction arcs.



[2]

[Turn over



16 Jan asks some delivery drivers how much money they spend on fuel each week.

The results are shown below.

Amount, £A	Frequency
$0 < A \leq 40$	12
$40 < A \leq 80$	18
$80 < A \leq 120$	26
$120 < A \leq 160$	27
$160 < A \leq 200$	17

There are 2000 delivery drivers in the area.

Estimate how many delivery drivers in the area spend over £160 on fuel each week.

Show your working out clearly.

Answer _____ [2]



17 A college has 270 students.

120 of the students are male.

The probability that a male student plays sport is $\frac{7}{20}$

The probability that a female student plays sport is 0.4

What **fraction** of the students who play sport are male?

Answer _____ [4]

[Turn over

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24GMC6119

18 (a) Explain why 105001 is not a binary number.

Answer _____ [1]

(b) Write the number 23 as a binary number.

Answer _____ [1]

(c) Jim says that the binary number 110001 is a square number when it is changed into a decimal number.

Is Jim correct?

Show your working out clearly.

Answer _____ because _____ [2]



19 The first 6 terms in sequence P are

3, 5, 7, 9, 11, 13, ...

The first 6 terms in sequence Q are

1, 5, 9, 13, 17, 21, ...

Joanne adds the first term of sequence P to the first term of sequence Q.

She adds the second term of sequence P to the second term of sequence Q.

She continues in this way to produce a new sequence.

(a) Write down the n th term for this new sequence.

Answer _____ [2]

(b) Find the 20th term for this new sequence.

Answer _____ [1]

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Question Number	Marks
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Total Marks	
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