Rewarding Learning

Centre Number

Candidate Number

General Certificate of Secondary Education
November 2025

Mathematics

StemUp Model Solution

Unit M5 Paper 1
(Non-Calculator)
Foundation Tier



[GMC51]

GMC51

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.

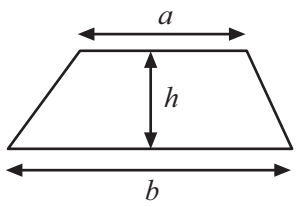
INFORMATION FOR CANDIDATES

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.

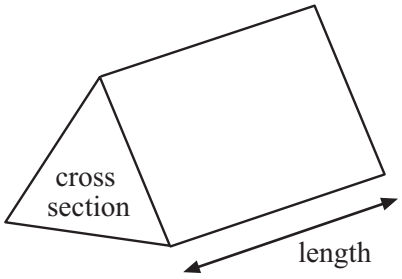
15156.06 **R**

Formula Sheet

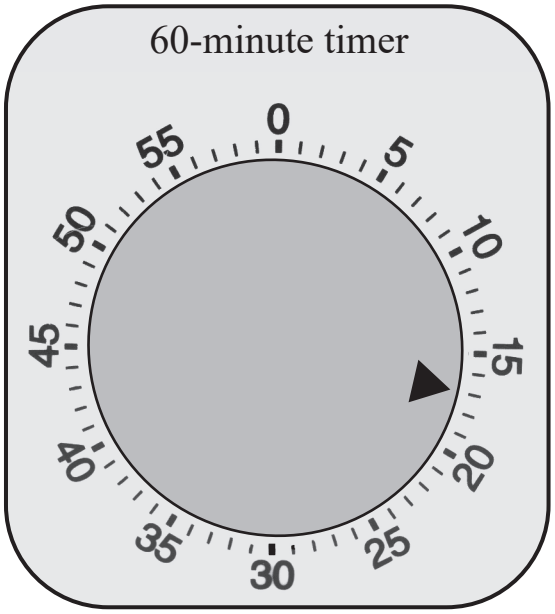
Area of trapezium $= \frac{1}{2}(a + b)h$



Volume of prism = area of cross section × length

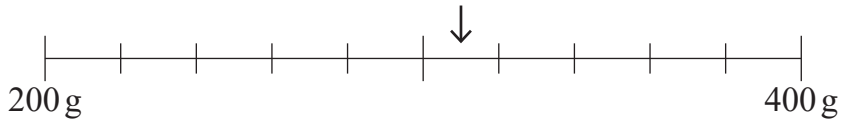


1 **(a)** What reading is shown on the 60-minute timer?



Answer 17 minutes [1]

(b) Penny says the arrow on the scale below shows a reading of 310 g.



200 g to 400 g is 10 divisions, so each division = 20 g

Explain why she is correct.

Answer the arrow is halfway between 300 g and 320 g, so 310 g [1]

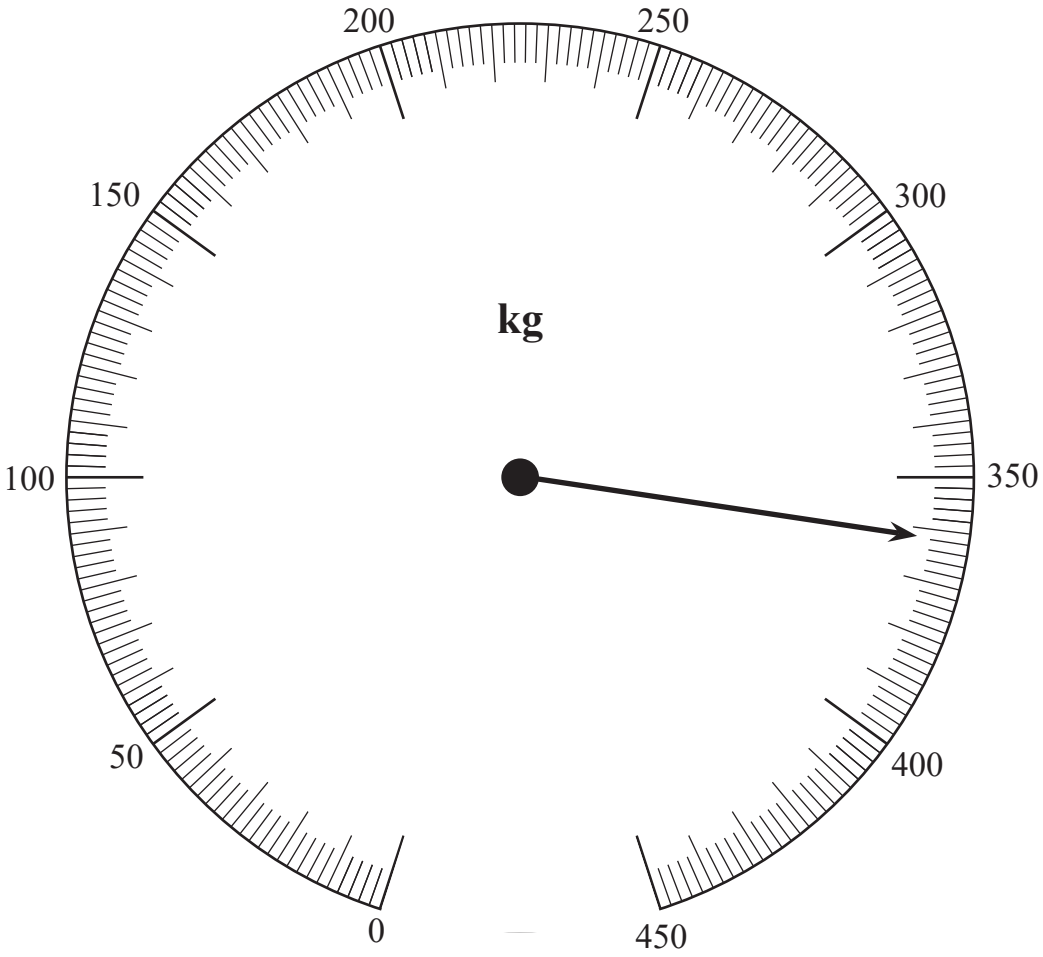
[Turn over

(c) Mark with an arrow a reading of 3.6 on the gauge below.



[1]

(d) What reading is shown on the weighing scale?



Answer 362 kg [1]

[Turn over

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2 The map shows some places in Ireland.



(a) Which place on the map is furthest South?

Answer Cork [1]

(b) What compass direction is Limerick from Mullingar?

Answer South West [1]

3 Some events are given below.

Event A A fair coin is tossed and it lands on heads

Event B A fair dice, numbered 1 to 6, is rolled and lands on the number 7

Event C A person chosen at random is right-handed

Event A has an evens chance of occurring so has been placed in the Evens box.

Impossible	Unlikely	Evens	Likely	Certain
B		**A**	C	

(a) Place Events B and C in the correct boxes. [2]

(b) Write an Event D that is certain.

Event D A fair dice, numbered 1 to 6, is rolled and lands on a number less than 7 [1]

[Turn over

4 A band played a concert in four different cities.

The numbers in attendance are shown in the table.

City	Numbers in attendance
Lisburn	270
Belfast	650
Armagh	380
Newry	200

A total of 1500 people attended the concerts.

How many attended in Newry?

270 + 650 + 380 = 1300

1500 − 1300 = 200

Answer 200 [4]

5 Circle the best estimate for each of the following.

(a) 57.31×10.01

60 (600) 6000 [1]

(b) $611 \div 51$

10 11 (12) [1]

6 **(a)** Write down the next term in this sequence.

2, 8, 14, 20, 26, 32, 38 [1]

(b) Write down the rule for this sequence.

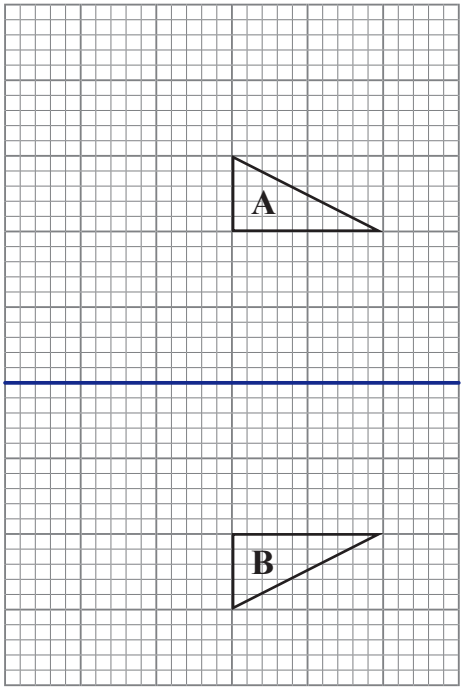
43, 34, 25, 16, 7, ...

Answer Subtract 9 [1]

[Turn over

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

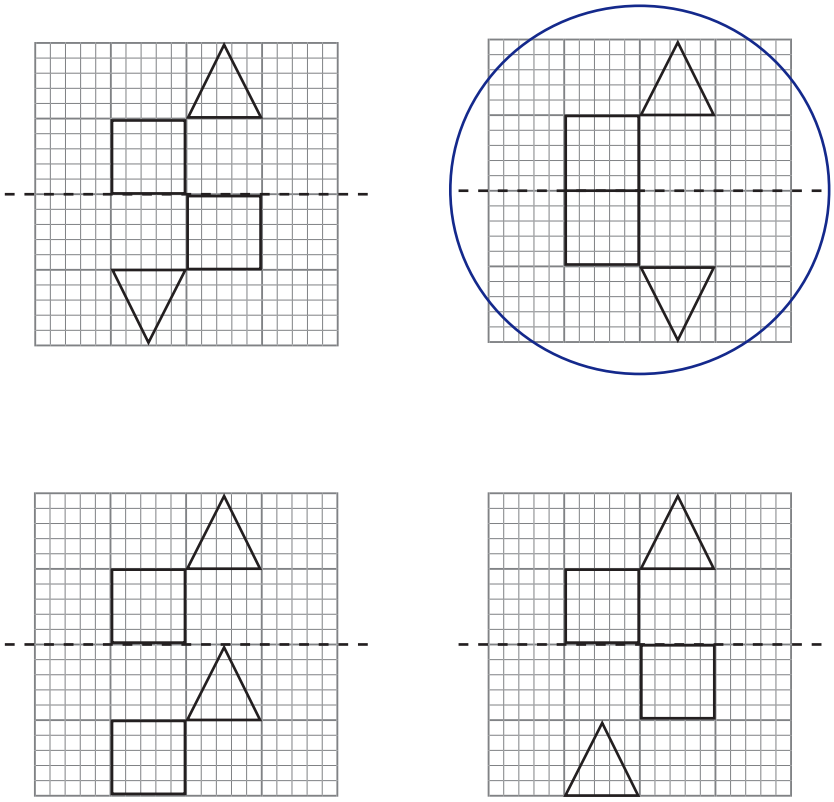
Draw the mirror line on the grid.



[1]

(b) Which one of the reflections is correct?

Circle your answer.



[1]

[Turn over

8 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.

11 + 14 = 25 students

Answer $\frac{14}{25}$ [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?

$\frac{4}{5} \times 25 = 25 \div 5 \times 4 = 20$

Answer 20 [1]

9 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?

$\frac{1}{5}$ of 40 = 40 ÷ 5 = 8, Jonah's age is 8

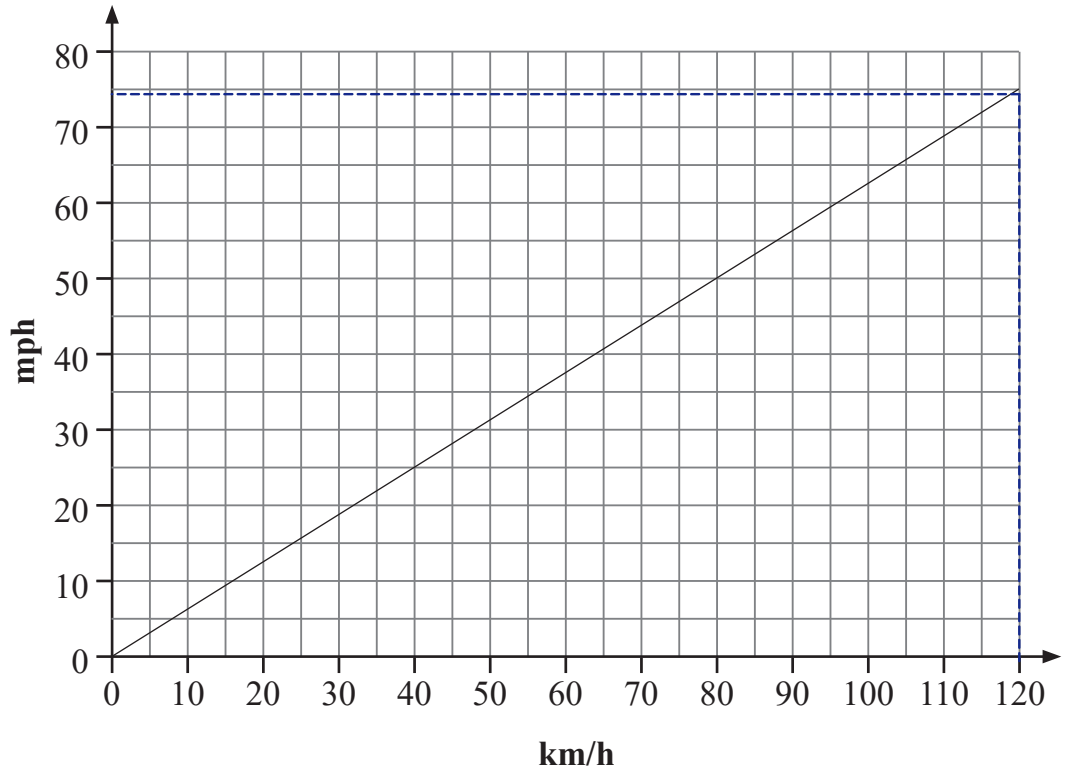
In 6 years: dad = 46, Jonah = 14

46 − 14 = 32

Answer 32 years [3]

[Turn over

10



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).

From the graph: 120 km/h = 75 mph

240 km/h = 2 × 120 km/h

so 2 × 75 = 150 mph

Answer *150* mph [2]

11 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.

7 hours = 7 × 60 = 420 minutes

10% of 420 = 42

5% of 420 = 21

15% = 42 + 21 = 63 minutes stopped

Driving = 420 − 63 = 357 minutes

Answer 357 minutes [4]

[Turn over

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

−2 , 1, 6, 13, 22, 33, 46 [2]

differences: +5, +7, +9, +11 so −2 (+3) and 33 + 13 = 46

(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

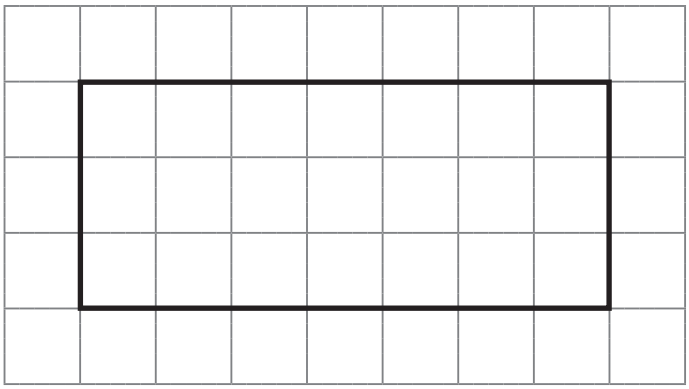
Find the second term.

$3^2 + 7 = 9 + 7 = 16$

Answer 16 [1]



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



The scale is 1 cm = 5 m

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

Drawing is 7 cm by 3 cm

Perimeter = 7 + 3 + 7 + 3 = 20 cm

Actual = 20 × 5 = 100 m

Answer _____*100*_____ m [3]

[Turn over

14 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, Total = 4 + 6 + 3 = 13 tins $\frac{3}{13}$ [1]

(b) is mushroom, 0 [1]

(c) contains lentils? 4 + 6 = 10 with lentils $\frac{10}{13}$ [1]

15 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?

180 ÷ 6 = 30

7 × 30 = 210

Answer 210 grams [2]

16 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.

$25\% = \frac{1}{4}$

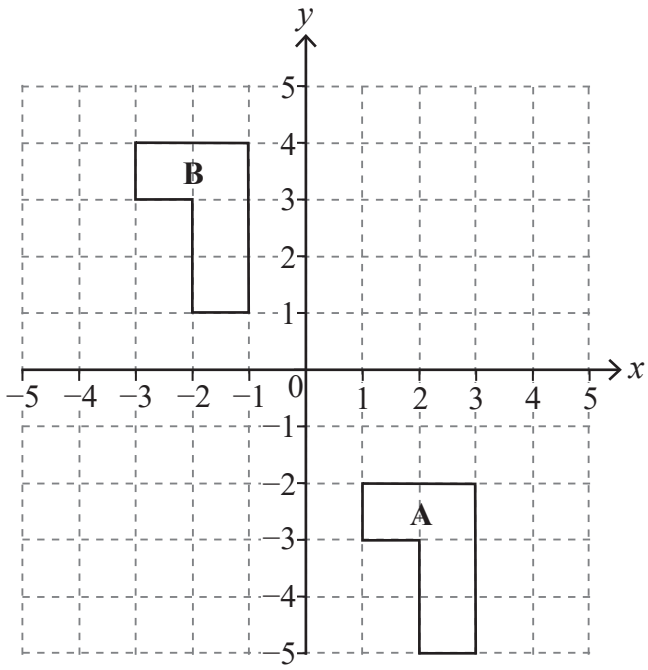
$\frac{3}{7} + \frac{1}{4} = \frac{12}{28} + \frac{7}{28} = \frac{19}{28}$

$1 - \frac{19}{28} = \frac{28}{28} - \frac{19}{28} = \frac{9}{28}$

Answer $\frac{9}{28}$ [3]

[Turn over

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



Answer Translation, 4 right and 6 down [2]

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

Write down the shortest possible length of the sports pitch.

92 − 0.5 = 91.5

Answer 91.5 m [1]

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

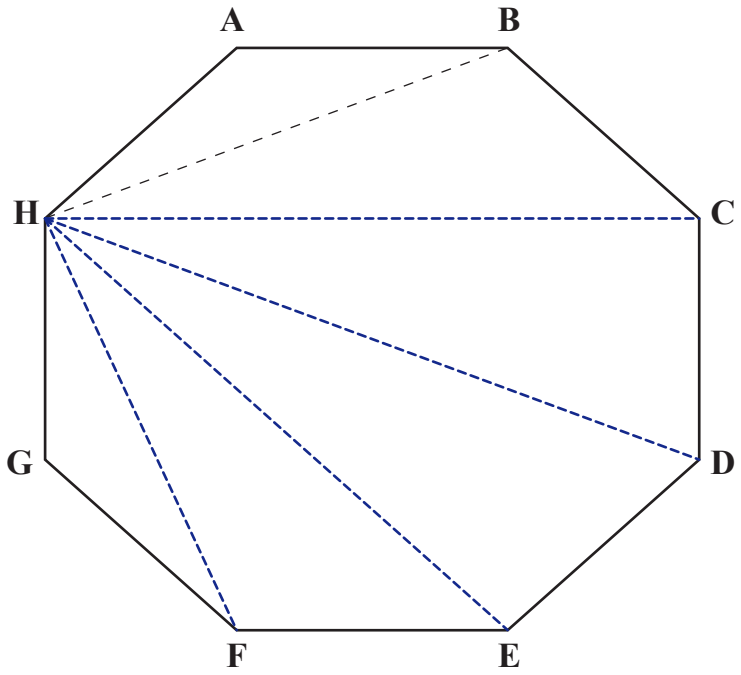


diagram not drawn accurately

Splitting from H gives 6 triangles

Angles in each triangle = 180°

6 × 180 = 1080°

Answer 1080 ° [3]

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For Examiner's use only	
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