Rewarding Learning

Centre Number

71	

Candidate Number

General Certificate of Secondary Education
January 2011

Mathematics

Module N5 Paper 1
(Non-calculator)
Foundation Tier

[GMN51]

FRIDAY 14 JANUARY

9.15 am – 10.15 am

GMN51

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
Total Marks	

TIME

1 hour.

INSTRUCTIONS TO CANDIDATES

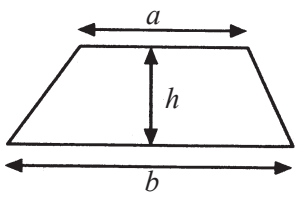
Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
Write your answers in the spaces provided in this question paper.
Answer **all fifteen** questions.
Any working should be clearly shown in the spaces provided since marks may be awarded for partially correct solutions.
You **must not** use a calculator for this paper.

INFORMATION FOR CANDIDATES

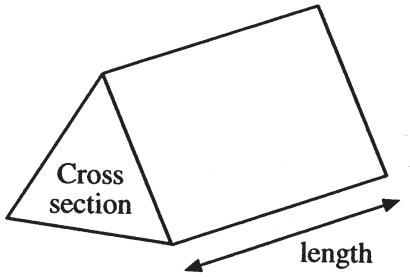
The total mark for this paper is 56.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
You should have a ruler, compasses, set-square and protractor.
The Formula Sheet is on page 2.

Formula Sheet

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



Volume of prism = area of cross section × length



Examiner Only	
Marks	Remark

1 Complete each sentence with the name of a 3D mathematical shape.

(a) The chocolate box is a

_____ [1]

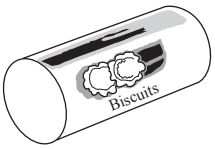
(b) The popcorn packet is a

_____ [1]

(c) The globe is a

_____ [1]

(d) The biscuit packet is a



_____ [1]

(e) Write down the name of a real life object which is a cuboid.

Answer _____ [1]

Examiner Only	
Marks	Remark

2 **(a)** In an examination hall the desks are arranged in rows.

Each row has 28 desks and there are 14 rows.

Estimate the number of desks in the examination hall.

Answer _____ desks [2]

(b) The memory card in a digital camera contains 112 pictures.

A photo booth charges 18p per print for photographs.

Estimate how much it would cost to print out all the pictures on the memory card.

Answer £ _____ [2]

(c) A shop is selling low-energy light bulbs for £2.89 each.

Estimate how many I can buy for £20

Answer _____ bulbs [2]

Examiner Only

Marks	Remark

3 Choose from

Impossible	Certain	Likely	Unlikely	Evens

to describe the probability of each of the following.

(a) An ordinary coin when tossed will show "heads".

Answer _____ [1]

(b) Everyone in a class at school will have the same colour of hair.

Answer _____ [1]

(c) You will pick a black ball out of a bag only containing black balls.

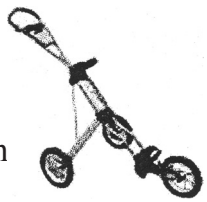
Answer _____ [1]

(d) An ordinary dice will land on an 8.

Answer _____ [1]

---

4 **(a)** A factory makes golf trolleys. The number of wheels ordered is given by the formula.



Number of Wheels Ordered = Three × Number of Trolleys + Ten

(i) How many wheels are ordered for 80 trolleys?

Answer _____ [2]

(ii) Why do you think 10 has been added in the formula?

Answer _____ [1]

(b) B = 3D

Find the value for B when D = 3.5

Answer B = _____ [1]

Examiner Only

Marks	Remark

5 **(a)**

INCHES	FEET	OUNCES	POUNDS	PINTS	GALLONS

Choose the unit most likely to be used for measuring

(i) the width of a room, Answer _____ [1]

(ii) the capacity of a kettle. Answer _____ [1]

(b) Given that 2.2 pounds is approximately equal to 1 kg, calculate the number of pounds in 6 kg.

Answer _____ pounds [2]

---

6 **(a)** Pete says that the square root of 55 lies between 7 and 8

Is he right? Explain your answer.

Answer _____ because _____

_____ [1]

(b) Calculate **(i)** $6 + 8 \times 2$

Answer _____ [1]

(ii) $10 \div 5 + 8 \div 2$

Answer _____ [1]

(iii) $4 \times 12 \div 8 - 6$

Answer _____ [1]

Examiner Only

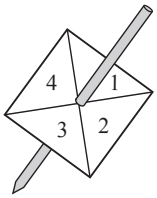
Marks	Remark

7 The table gives the names of some quadrilaterals and their symmetries. Complete the table.

Name of Quadrilateral	Number of Lines of Symmetry	Order of Rotational Symmetry
Square	4	4
_____	2	2
Parallelogram	_____	_____

[3]

8 Mary throws an ordinary dice and John spins a four-sided spinner with the digits 1, 2, 3 and 4



(a) Complete the following table showing the **totals** of the scores from the dice and the spinner.

SPINNER \ DICE	1	2	3	4	5	6
1						
2						
3						
4						

[2]

(b) Calculate the probability of a total score that is less than 7

Answer _____ [2]

Examiner Only	
Marks	Remark

9 **(a)** "Any even number greater than 2 can be written as the sum of two prime numbers".

Fill in the blanks to give **two** examples to illustrate this statement.

$6 = 3 + \_\_\_\_$, $8 = \_\_\_\_ + \_\_\_\_$ [1]

(b) Use the number 10 to show that the following statement is **not** true.

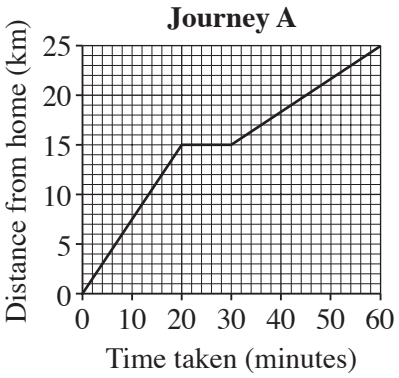
"Any even number greater than 2 can be written as the sum of two prime numbers in only one way". [2]

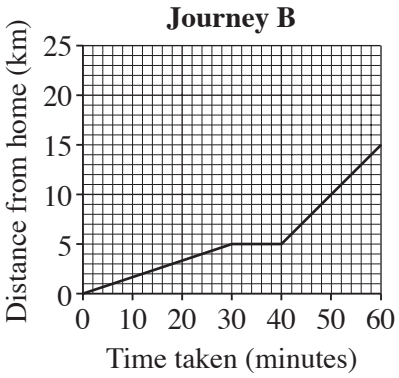
(c) "Any whole number greater than 5 can be written as the sum of three prime numbers".

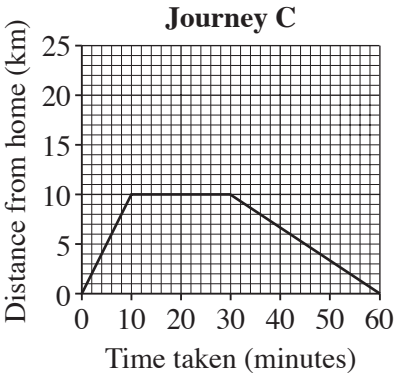
Give **two** examples to illustrate this statement.

Answer **(i)** _____ **(ii)** _____ [1]

10 The graphs show 3 different journeys by bicycle.







(a) Which of the journeys has the longest stopping time?

Answer _____ [1]

(b) Which graph could describe the following journey?

"Ryan cycles uphill. He then rests before continuing his journey downhill".

Answer _____ [1]

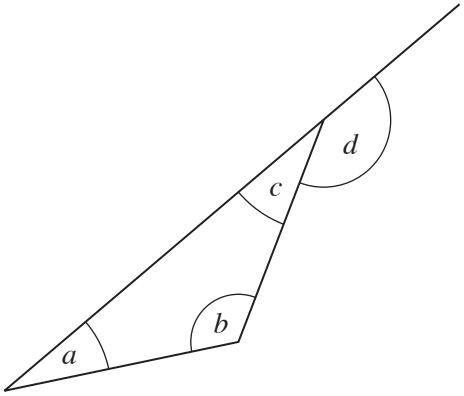
(c) What is the average speed for the first part of **Journey B**?

Answer _____ km/h [2]

Examiner Only	
Marks	Remark

Examiner Only	
Marks	Remark

11



Prove that angle d = angle a + angle b.

[3]

---

12 In a school there are 480 girls. Of these 60 are left handed. Find the probability that a girl chosen at random in this school is left handed.

Answer _____ [1]

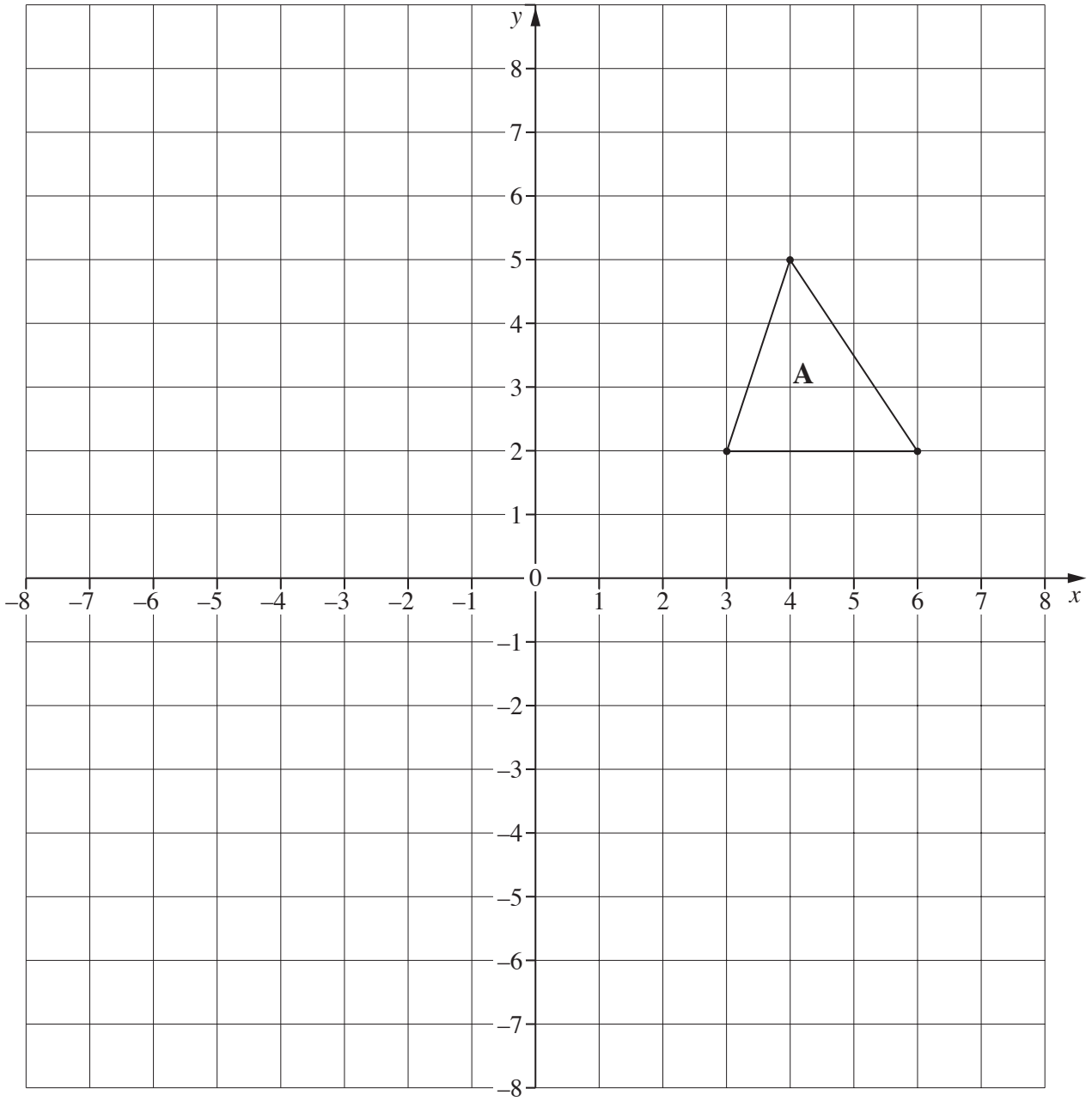
---

13 Rewrite $5 - x = 3 + y$ to make x the subject.

Write the answer in its simplest form.

Answer x = _____ [2]

14



(a) Rotate triangle **A** 90° clockwise about (0, 2). Label the new triangle **B**. [2]

(b) Draw the image of **A** under a translation of $\begin{pmatrix} -2 \\ 3 \end{pmatrix}$.
Label the new triangle **C**. [2]

Examiner Only	
Marks	Remark

Examiner Only	
Marks	Remark

15 **(a)** Estimate the answer to $\dfrac{4.7 \times 20.1}{5.6 - 1.8}$

Answer _____ [2]

(b) Find the reciprocal of 2.2

Answer _____ [2]

THIS IS THE END OF THE QUESTION PAPER

111523