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Centre Number										Candidate Number									
7	1																		

General Certificate of Secondary Education
2010

Mathematics

Module N5 Paper 1
(Non-calculator)
Foundation Tier

GMN51

[GMN51]

MONDAY 7 JUNE

1.30 pm – 2.30 pm

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	

Examiner Number

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.
Complete in blue or black ink. Pencil may be used in diagrams only.
Do not write with a gel pen.
Do not use correction fluid to correct errors in your answers.
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.

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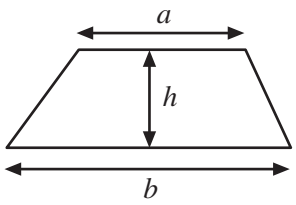
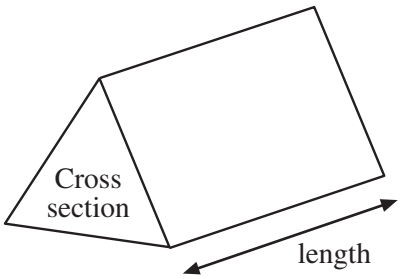
Formula Sheet

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



Volume of prism = area of cross section × length



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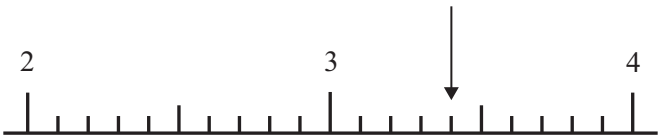
Question 1

Examiner Only	
Marks	Remark

(a) What is the scale reading shown by the arrow?



Answer _____ [1]

(b) On the diagram, show with an arrow, a reading of 32.35

[1]

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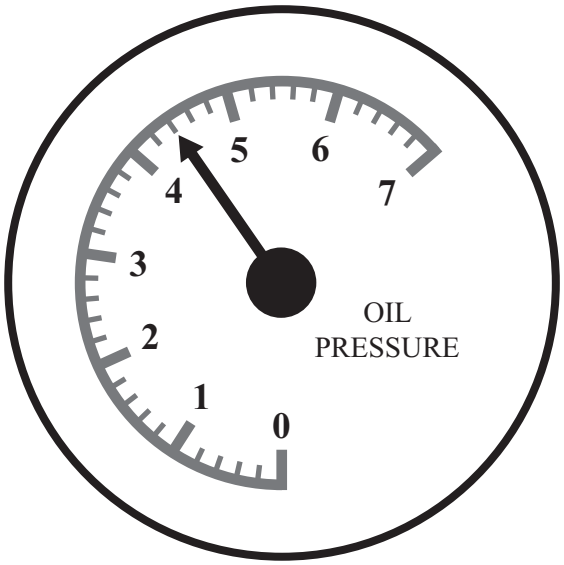
Question 1 continued

Examiner Only	
Marks	Remark

(c) The dial shows an oil pressure reading.



(i) What is the oil pressure?

Answer _____ [1]

(ii) The oil pressure drops by 1.8 units. On the dial above, show the new reading by drawing an arrow. [1]

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Question 2

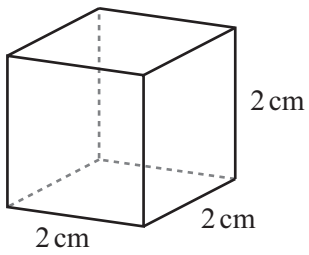
Examiner Only	
Marks	Remark

(a) Draw a sketch of a square-based pyramid in the space below.

[1]

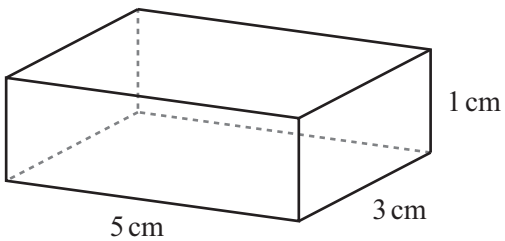
(b) Give the names for the shapes drawn below.

(i)



Answer _____ [1]

(ii)



Answer _____ [1]

[Turn over

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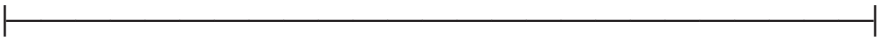
Question 3

Examiner Only	
Marks	Remark

Probability line



Impossible **Unlikely** **Even chance** **Likely** **Certain**

Choose the best word or words from the probability line to describe the chance of each of these events taking place.

Choosing at random, a day of the week

(a) containing the letter Y,

Answer _____ [1]

(b) beginning with a W,

Answer _____ [1]

(c) beginning with a T or an S,

Answer _____ [1]

(d) having less than six letters.

Answer _____ [1]

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Question 4

Examiner Only	
Marks	Remark

(a) (i) Estimate 19.1 ÷ 3.9

Answer _____ [1]

(ii) Estimate 298 × 4.12
Show your working.

Answer _____ [2]

(b) Estimate how many shirts costing £8.65 each could be bought for £70

Answer _____ [2]

(c) Phil works from 9 am to 12 am on Mondays and Tuesdays.
She works from 4 pm to 9 pm on Wednesdays and Fridays.
She earns £7.00 per hour.
How much does she earn per week?

Answer £ _____ [3]

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Question 4 continued

Examiner Only	
Marks	Remark

(d) Calculate

(i) $-4 + 12$

Answer _____ [1]

(ii) $-4 - 3$

Answer _____ [1]

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Question 5

Examiner Only

Marks	Remark

Name a three-sided shape which has rotational symmetry of order 3

Answer _____ [1]

[Turn over

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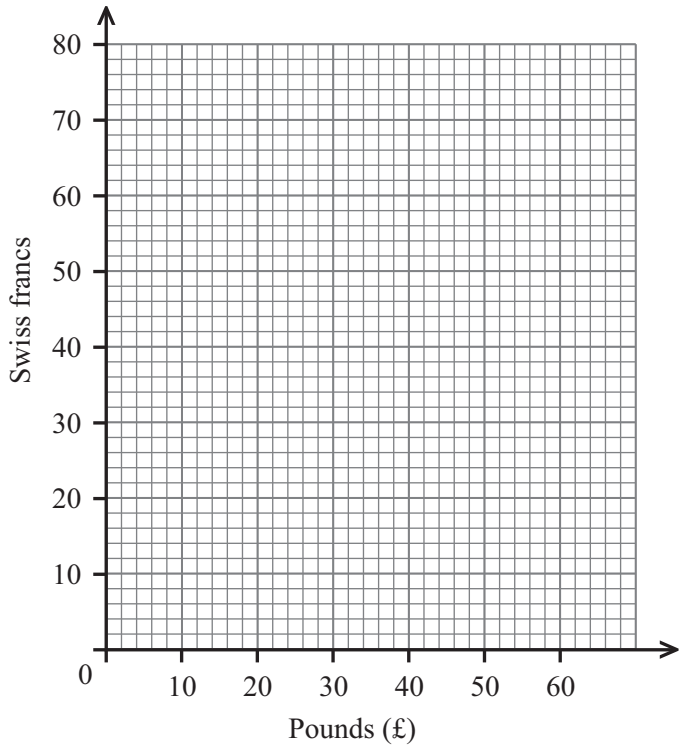
Question 6

Examiner Only	
Marks	Remark

Pounds (£)	5	20	35	50
Swiss francs	8	32	56	80

(a) Plot the points and draw the conversion graph on the grid below.



[3]

(b) Use your graph to convert:

(i) £28 to Swiss francs.

Answer _____ Swiss francs [1]

(ii) 66 Swiss francs to Pounds (£).

Answer £ _____ [1]

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Question 7

Examiner Only	
Marks	Remark

Convert

(a) 5 kg to pounds given that 1 kg = 2.2 pounds.

Answer _____ pounds [1]

(b) 100 litres to pints given that 4 litres = 7 pints.

Answer _____ pints [2]

(c) 60 mph into km/h.

Answer _____ km/h [2]

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Question 8

Examiner Only	
Marks	Remark

(a) Calculate

(i) $14 - 6 \div 2$

Answer _____ [1]

(ii) $15 - 2(4 + 1)$

Answer _____ [1]

(b) Insert symbols from +, –, × **or** ÷ into the boxes in order to make this calculation correct.

$12 \square 4 \square 2 = 4$ [1]

(c) Insert a pair of brackets into this calculation to make it correct.

$5 \times 6 - 2 + 2 = 22$ [1]

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Question 9

Examiner Only	
Marks	Remark

A rectangle has a length of 2.5 cm and a breadth of 6 cm.
This rectangle is now enlarged by a scale factor of four.
Write down the sizes of its new length and breadth.

Answer New length = _____ cm, New breadth = _____ cm [2]

Question 10

Examiner Only	
Marks	Remark

Raymond claims "the sum of three consecutive integers is always odd".
Is he correct? Give a reason for your answer.

Answer _____ because _____

_____ [2]

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Question 11

Examiner Only	
Marks	Remark

A new box of pencils has 30 pencils in it.
Three of the pencils have broken leads.

(a) (i) I choose a pencil at random from this box.
What is the probability that it does **not** have a broken lead?

Answer _____ [2]

The first pencil I choose has a broken lead and I don't replace it in the box.

(ii) What is the probability that the next pencil I choose **will** have a broken lead?

Answer _____ [1]

(b) The company that makes the pencils claims that 99% of them are always sharpened and ready to use.
Would you agree?
Explain your answer.

Answer _____ because _____

_____ [1]

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Question 12

Examiner Only	
Marks	Remark

$$R = \frac{S(2 + T)}{6}$$

Calculate the value of R when $S = 15$ and $T = -10$

Answer $R =$ _____ [3]

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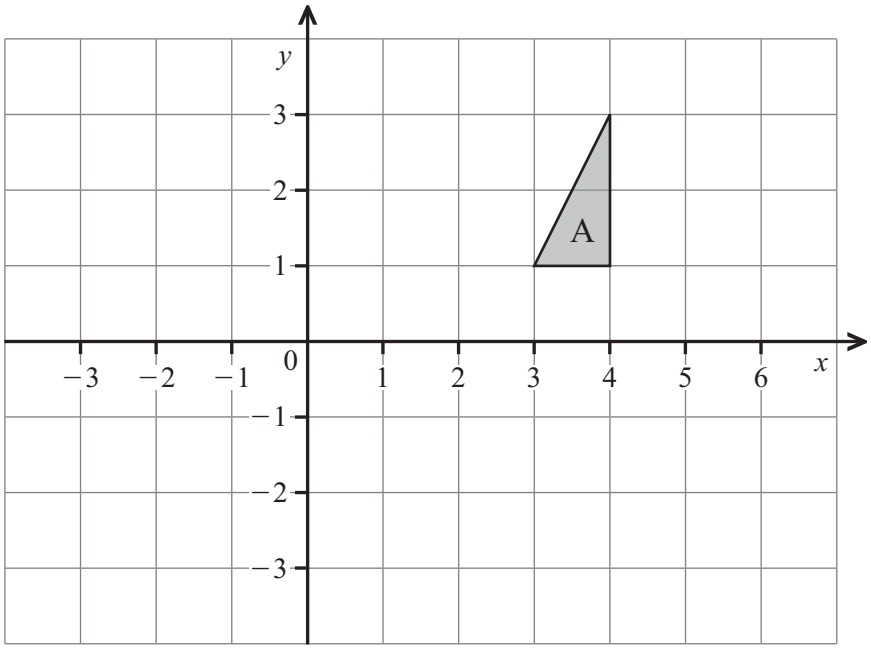
Question 13

Examiner Only	
Marks	Remark

(a) Reflect triangle A in the line $x = 2$
Label your triangle, B.



[2]

(b) Draw the image of triangle A after a rotation of 90° clockwise about the point $(3, 0)$. Label your triangle, C. [2]

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Question 14

Examiner Only	
Marks	Remark

(a) Given that $\frac{3024}{36} = 84$, write down the answer to 360×84

Answer _____ [1]

(b) Decide whether the following statements are true or false.
In each case, give an example to support your answer.

(i) Negative numbers have no reciprocals.

Answer _____ because _____ [1]

(ii) The product of a number with its own reciprocal is 1

Answer _____ because _____ [1]

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Question 15

Examiner Only	
Marks	Remark

John has two green and five blue marbles in a bag.
How many blue marbles must be added to the bag to make the probability of choosing a blue marble at random from the bag equal to $\frac{4}{5}$?

Answer _____ [2]

THIS IS THE END OF THE QUESTION PAPER

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