Rewarding Learning

Centre Number

71	

Candidate Number

General Certificate of Secondary Education
January 2010

Mathematics

Module N5 Paper 1
(Non-calculator)
Foundation Tier

[GMN51]

GMN51

FRIDAY 15 JANUARY

9.15 am – 10.15 am

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
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6	
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11	
12	
13	
14	
15	
16	
17	
18	
Total Marks	

TIME

1 hour.

INSTRUCTIONS TO CANDIDATES

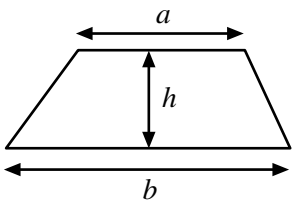
Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
Write your answers in the spaces provided in this question paper.
Answer **all eighteen** questions.
Any working should be clearly shown in the spaces provided since marks may be awarded for partially correct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

INFORMATION FOR CANDIDATES

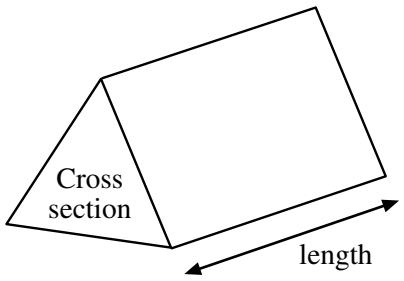
The total mark for this paper is 56.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.
You should have a ruler, compasses, set-square and protractor.
The Formula Sheet is on page 2.

Formula Sheet

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

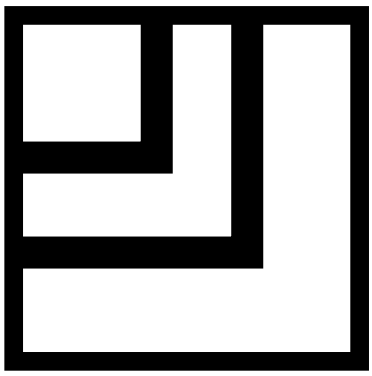


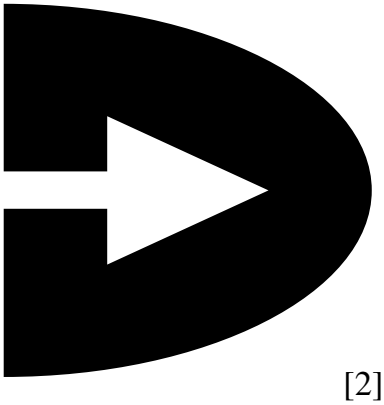
Volume of prism = area of cross section × length



Examiner Only	
Marks	Remark

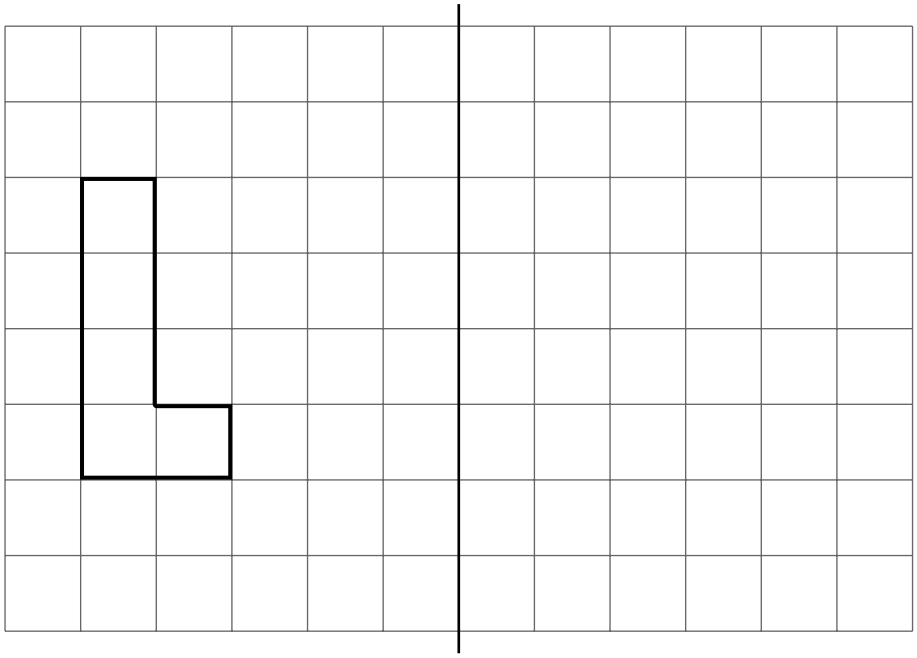
1 **(a)** Draw a line of symmetry on each shape below.





[2]

(b)

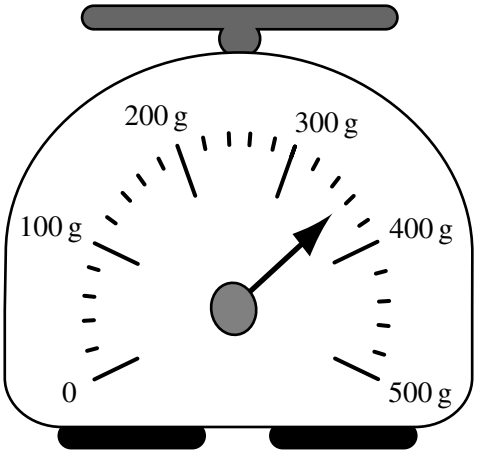


mirror line

Draw the reflection in the mirror line of the given shape. [2]

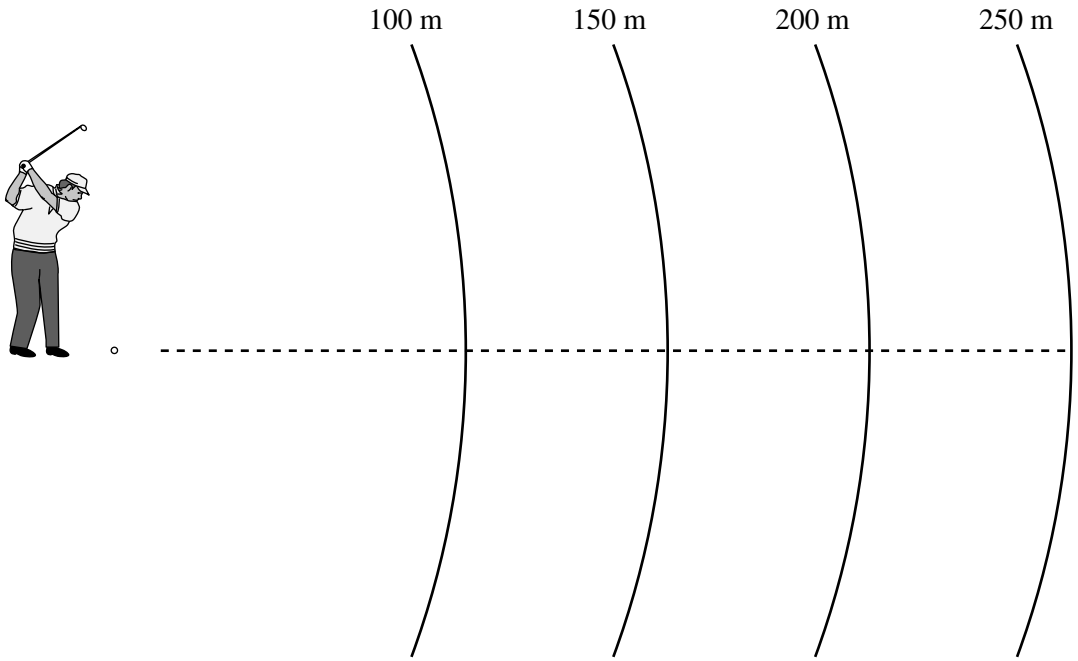
Examiner Only	
Marks	Remark

2 **(a)** Write down the weight shown on the scale.



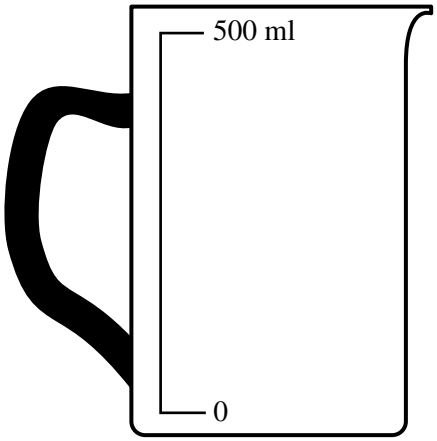
Answer _____ g [1]

(b) At a golf driving range, Donald hits the ball 225 m. Mark along the central line an X to show where the ball landed.



[1]

(c) Create an **accurate** scale on this measuring jug and mark a water level at 280 ml.



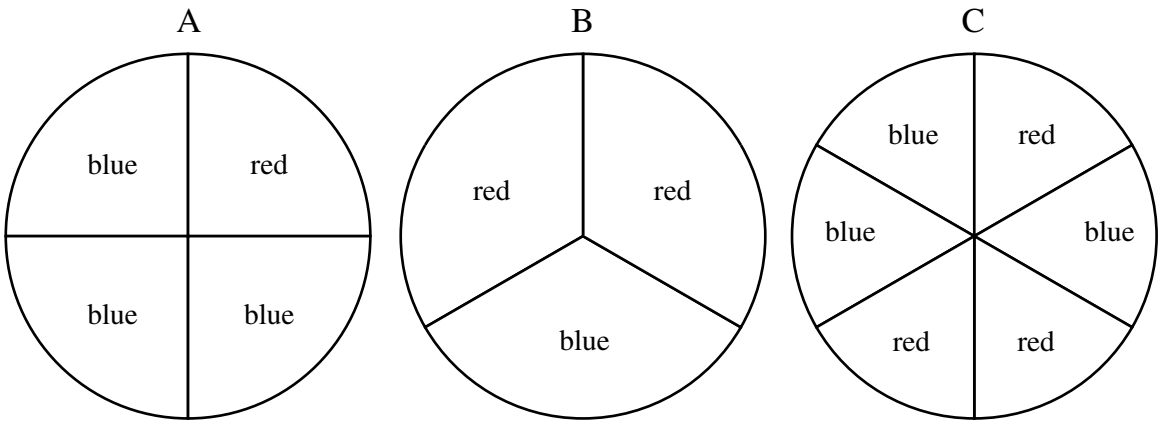
[2]

Examiner Only

Marks	Remark

Examiner Only	
Marks	Remark

3 Below are three spinners used in a board game.



(a) Which spinner is most likely to land on red?

Answer _____ [1]

(b) Explain why there is an even chance of spinner C landing on red.

Answer _____ [1]

4

A hotel provides food at a conference for £7.95 per head. There are 153 people at the conference.
Estimate the total cost of the food.
Show your working.

Answer £_____ [2]

Examiner Only	
Marks	Remark

5 In a quiz, there are twenty questions.

Each correct answer gains six points and each wrong answer loses two points.

(a) If a contestant in the quiz answers all twenty questions, explain how they could score 96 points altogether.

[2]

(b) Explain how they could score 0 points altogether.

[2]

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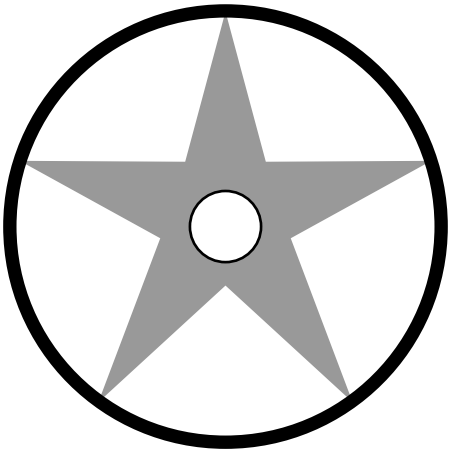
6 In the following sentences, fill in the correct **metric** units which can be used in place of the given imperial units.

(a) Butter can be bought in **pounds** or _____ [1]

(b) Milk can be bought in **pints** or _____ [1]

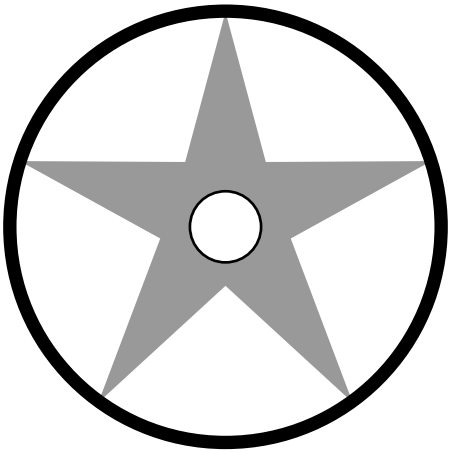
Examiner Only	
Marks	Remark

7 **(a)** Mark the centre of rotational symmetry on the shape below.



[1]

(b) Draw **all** the axes of symmetry on the shape below.



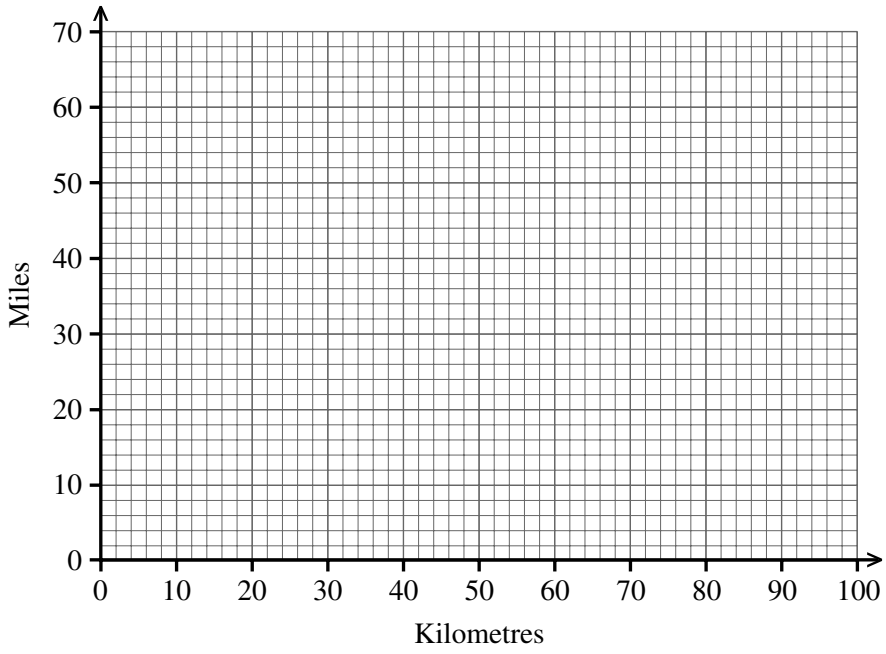
[2]

(c) The distance round the edge of a wheel of this shape is about 12 feet.
About how many metres is that?

Answer _____ m [2]

8 **(a)** Use the values in the table to draw the conversion graph from kilometres to miles on the grid below.

Kilometres	20	30	40	50	60	70	80
Miles	12.4	18.6	24.9	31.1	37.3	43.5	49.7



[3]

(b) Use your graph to convert 35 miles into kilometres.

Answer _____ km [1]

Examiner Only

Marks	Remark

Examiner Only	
Marks	Remark

9 **(a)** Calculate

(i) $15 - (2 - 7)$

Answer _____ [1]

(ii) $24 - 12 \div 4$

Answer _____ [1]

(b) Insert brackets in order to make the following calculation correct.

$$14 \quad - \quad 4 \quad \times \quad 3 \quad - \quad 2 \quad = \quad 10$$

[1]

(c) Estimate to the nearest integer, $\sqrt{84}$

Answer _____ [1]

(d) A credit card bill requires a payment of 10% of £186 or £5 whichever is the greater. How much must be paid?

Answer £ _____ [3]

10 **(a)** 800 tickets are sold for a raffle. First prize is a holiday.

Examiner Only	
Marks	Remark

(i) I buy one ticket for the raffle. What is the probability I win the holiday?

Answer _____ [1]

(ii) Explain why the probability that a female wins the holiday may not be $\frac{1}{2}$

Answer _____

_____ [1]

(b) The probability that a student writes left-handed is 0.12
What is the probability that a student writes right-handed?

Answer _____ [1]

11

Belfast, Europa Buscentre - Armagh													Goldline Express Service 251
Monday to Friday													
Service		271									270		
Notes			A	A		A	A	A	F	A		A	
Notes									NJA				
Belfast, Europa Buscentre	0800	0910	1000	1100		1200	1300	1400	1400	1500	1545	1600	1645
Loughview Park and Ride	0825	0935	|	|		|	|	|	|	|	1610	|	|
Moria, McClellands Shop	|	|	1025	1125		1225	1325	1425	|	1525	|	1625	|
Moria, Village Gatestop	|	|	1027	1127		1227	1327	1427	|	1527	|	1627	|
Maralin	|	|	1030	1130		1230	1330	1430	|	1530	|	1630	|
Dollingstown	|	|	1035	1135		1235	1335	1435	|	1535	|	1635	|
Lurgan, Queen Street	|	|	1038	1138		1238	1338	1438	|	1538	|	1638	|
Lurgan, Market Street	0835	0945	1040	1140		1240	1340	1440	|	1540	1625	1640	|
Craigavon, Rushmere Centre	0900	|	1050	1150		1250	1350	1450	|	1550	|	1650	|
Portadown, Market Street	0915	1000	1100	1200		1300	1400	1500	|	1600	1645	1700	1730
Richhill Square	|	|	1118	1218		1318	1418	1518		1618	|	1718	|
Armagh Buscentre, Lonsdale Rd	0935	1020	1130	1230		1330	1430	1530	1500	1630	1705	1730	1750
Armagh Buscentre, Lonsdale Rd		1025			1230				|		|		1805
Monaghan, Library		|			1315			|		|		1805
Monaghan, Bus Station		1055			1325				1530		1735		1855

A – Ordinary service between Portadown and Armagh F – Fridays Only NJA – Does not operate during July and August

Source: Translink

(a) Jason takes the 1545 bus from Belfast to Armagh. How long should the journey take?

Answer _____ [1]

(b) Rebekah is in Belfast. She has to be in Armagh by 2.45 pm. What is the latest bus she could take from the Europa Buscentre?

Answer _____ [1]

(c) Colin travelled from the Europa Buscentre to the Armagh Buscentre in exactly one hour using this bus service. What day of the week must he have travelled on?

Answer _____ [1]

Examiner Only	
Marks	Remark

Examiner Only	
Marks	Remark

12 Rearrange $2p - 3 = 6 - q$ to make q the subject.

Answer $q =$ _____ [2]

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13 **(a)** Jack states that 'Any number cubed is always an even number'.
Give a counter example for this statement.

[2]

(b) Jill takes 120 steps to cover 72 metres.
What distance will she cover in taking 90 similar sized steps?

Answer _____ m [2]

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14 A recipe for two medium glasses of Apple and blackcurrant Smoothie uses

250 ml	Apple and blackcurrant juice
2 tablespoons	Natural yoghurt
180 ml	Milk
3 scoops	Vanilla ice cream

Complete the recipe for five medium glasses.

Answer

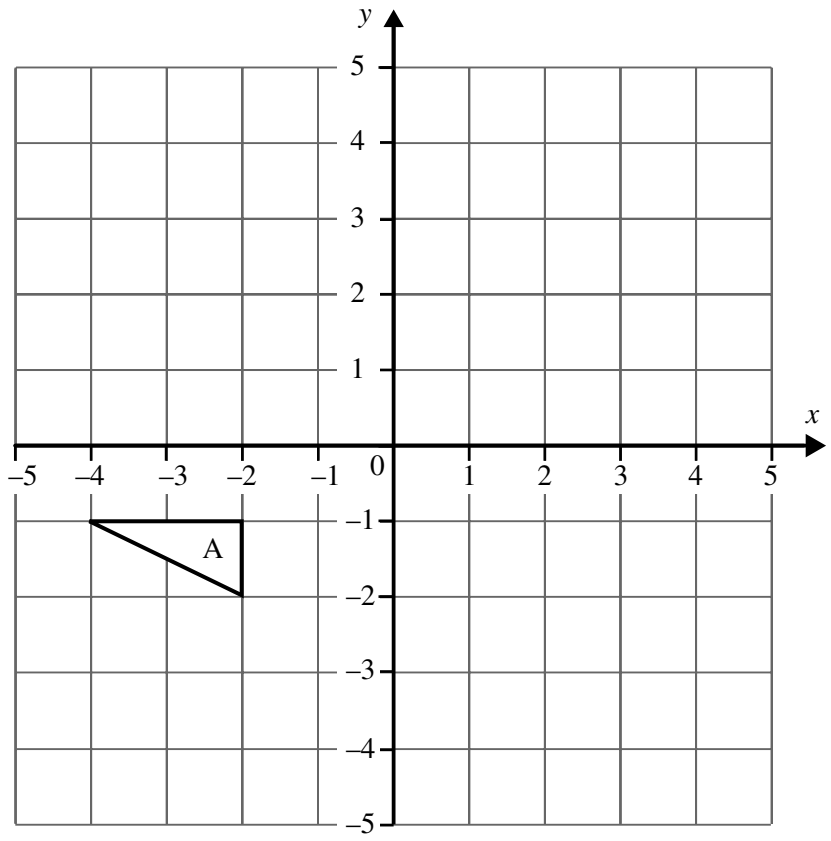
_____ ml	Apple and blackcurrant juice	
5 tablespoons	Natural yoghurt	
_____ ml	Milk	
_____ scoops	Vanilla ice cream	[2]

Examiner Only	
Marks	Remark

15 In a fairground game of chance, 120 people buy one ticket each.
The cost of a ticket is 50p.
The probability that a person wins a prize is $\frac{1}{12}$
Each winning ticket gets a prize of £1.50
What profit is made from the game?

Answer £ _____ [2]

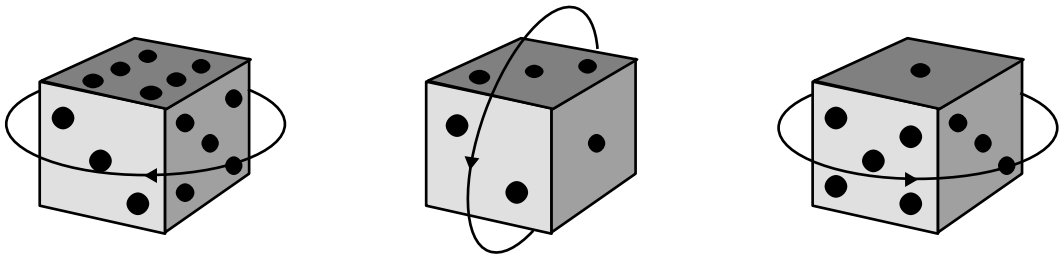
16



Draw the image of triangle A after a translation $\begin{pmatrix} 6 \\ -2 \end{pmatrix}$ [2]

Examiner Only	
Marks	Remark

17 Opposite faces of a dice add up to give seven.
As shown, the total of the numbers on the front faces is 3 + 2 + 5 = 10
In one move, **each** dice below is rotated in the direction shown one face at a time (a quarter turn).
After two moves, what will be the total of the numbers on the **front** faces?
Show your working.



Answer **Total** = _____ [2]

18 In a survey of 200 cars crossing a bridge, 45 had no passengers.
On a day when 4000 cars cross the bridge, how many cars would you expect to have no passengers?

Answer _____ [2]

THIS IS THE END OF THE QUESTION PAPER

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