Version 1.0

Centre Number					Candidate Number				
Surname									
Other Names									
Candidate Signature									

AQA

General Certificate of Secondary Education
Foundation Tier

Mathematics (Linear) B 4365/1F

Paper 1 Non-calculator

Specimen Paper 2012 Specification

F

For this paper you must have:
- mathematical instruments.

You must **not** use a calculator.

Time allowed
- 1 hour 15 minutes

Instructions
- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the space provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work that you do not want to be marked.

Information
- The marks for questions are shown in brackets.
- The maximum mark for this paper is 70.
- The quality of your written communication is specifically assessed in questions 5, 9 and 12.
  These questions are indicated with an asterisk (✳)
- You may ask for more answer paper and graph paper.
  These must be tagged securely to this answer booklet.

Advice
- In all calculations, show clearly how you work out your answer.

4365/1F

Formulae Sheet: Foundation Tier

Area of trapezium = $\frac{1}{2}(a + b)h$
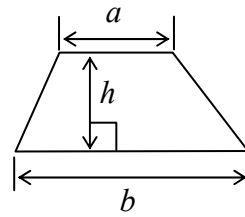
Volume of prism = area of cross-section × length
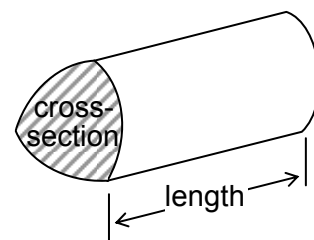
Answer **all** questions in the spaces provided.

1 Here are some number cards.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
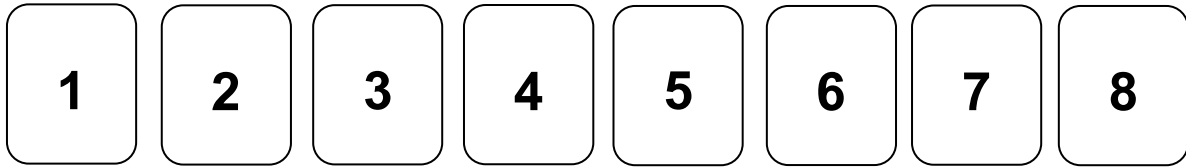
A card is chosen at random.

Match each statement to the correct position on the probability scale.
The first one is done for you.

| The card chosen is an odd number | The card chosen is less than ten | The card chosen is greater than two | The card chosen is a multiple of three |

impossible   unlikely   evens   likely   certain
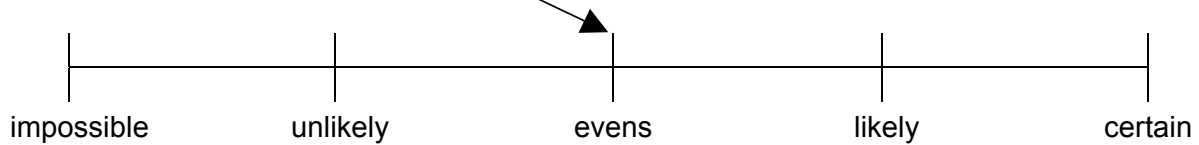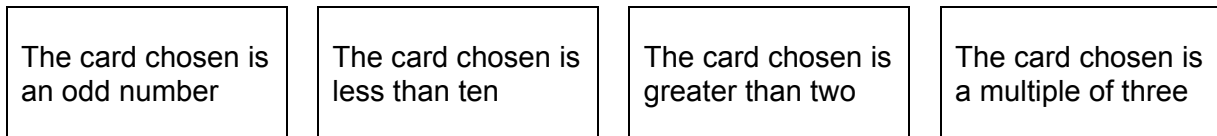
(3 marks)

Turn over for the next question

2 Part of a map is shown.

A location can be given by a letter and a number.

For example, the school is in D2.
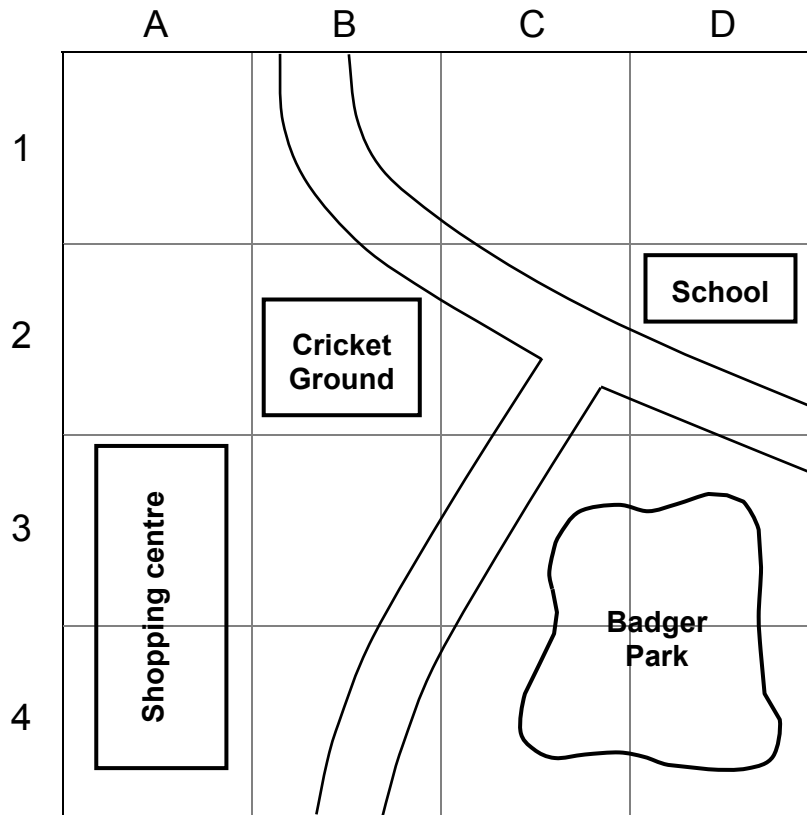
2 (a) In which square is the cricket ground?

Answer .... *(1 mark)*

2 (b) Badger Park occupies several squares.

List all the squares.

....

....

Answer .... *(2 marks)*

2 (c) The school is due East of the cricket ground.

Complete this sentence.

The cricket ground is due .... of the school.

(1 mark)

3 The timetable shows the train times between Huddersfield and Penistone.

Train Timetable: Huddersfield to Penistone						
Huddersfield:	*depart*	08:20	10:20	12:20	14:20	16:20
Denby Dale:	*depart*	08:45	10:45	12:45	14:45	16:45
Penistone:	*arrive*	08:55	10:55	12:55	14:55	16:55

3 (a) How long does the journey take between Huddersfield and Penistone?

....

Answer .... minutes *(1 mark)*

3 (b) Vidal and Sonia live in Huddersfield.
It takes them 25 minutes to travel from home to Huddersfield station.
They want to go to Penistone for a concert that starts at 3:15 pm.

What is the latest time they can leave home to get to the concert on time?

....

....

....

Answer .... *(3 marks)*

3 (c) The cost of food and drink from the Trolley service on the train is shown.

MENU

Tea	£1.50
Coffee	£1.50
Cold drink	95p
Crisps	50p
Chocolate bar	85p

They want two teas and two chocolate bars.
They only have £5.

Can they afford them?
You **must** show your working.

....

....

....

Answer .... *(3 marks)*

11

Turn over ▶

4 (a) Simplify $2x + 7x$

Answer .... *(1 mark)*

4 (b) Solve $3x = 18$

....

Answer $x =$ .... *(1 mark)*

4 (c) Solve $y - 6 = 7$

....

Answer $y =$ .... *(1 mark)*

✳ **5**

Not drawn accurately

48° 52°

A ———————————— B ———————————— C
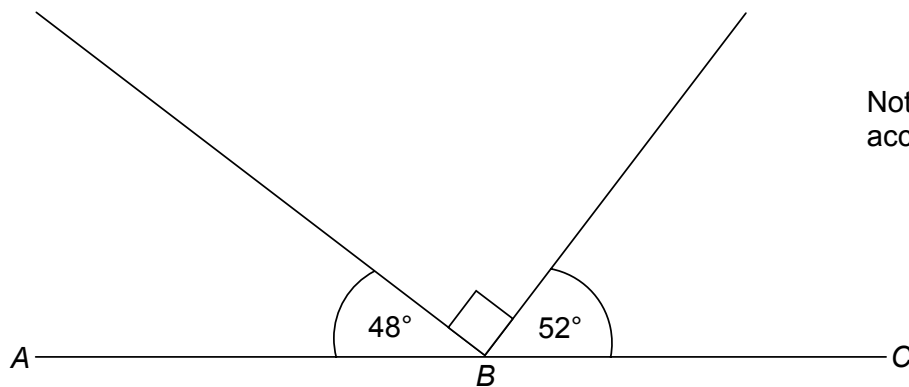
Is ABC a straight line?

Give a reason for your answer.

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(2 marks)

6   Here are instructions for cooking a turkey.

> Cook for 15 minutes at 220 °C
>
> Reduce the oven temperature to 160 °C
> and cook for 40 minutes per kilogram.

Kirsty is going to cook a 7 kilogram turkey.
She wants to take it out of the oven at 12.45 pm.

At what time must she start to cook it?

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Answer .... *(4 marks)*

7   In the magic square, the rows, columns and diagonals add to the same number.

10	w	x
5	y	9
6	11	4

Work out the values of w, x and y.

....

....

....

Answer $w =$ .... $x =$ .... $y =$ .... *(3 marks)*

12

8   Here is a rule to convert kilometres, k, to miles, m.

$$m = \frac{5k}{8}$$

8 (a)   Use the rule to convert 24 kilometres into miles.

....

....

Answer .... miles *(2 marks)*

8 (b)   The sign shows the speed limit, in kilometres per hour, in a German town.

Martin says that the speed limit is approximately 30 miles per hour.

Show that Martin is correct.

....

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....

(2 marks)

✱ **9** Here is part of a price list for a fruit and vegetable stall.

Price List

Fruit

Apples	30p each
Bananas	25p each
Oranges	20p each

Vegetables

Broccoli	75p per 100g
Carrots	20p per 100g
Cauliflower	£1 per 100g

The Government says we should eat 5 portions of fruit and vegetables every day.
A portion is an item of fruit or 100g of vegetables.

Dita has £15 to spend on fruit and vegetables for one full week of seven days.
She wants to buy at least two different fruits and two different vegetables.

Show **one** way of buying fruit and vegetables so that she has 5-a-day for one week.

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(5 marks)

9

10 Ehab asks 18 pupils to choose their favourite vegetable from a list.
These are his results.

peas	broccoli	peas	carrots	carrots	broccoli
peas	broccoli	sprouts	carrots	peas	carrots
carrots	peas	carrots	carrots	carrots	carrots

Ehab decides to draw a pie chart to show these results.
The table shows some of his work.

Favourite vegetable	Tally	Frequency	Angle on pie chart
Broccoli (B)	|||	3	60°
Peas (P)			
Carrots (C)			
Sprouts (S)			
		Total = 18	Total = 360°

10 (a) Complete the tally and frequency columns in the table.

(2 marks)

10 (b) (i) Complete the angle on the pie chart column in the table.

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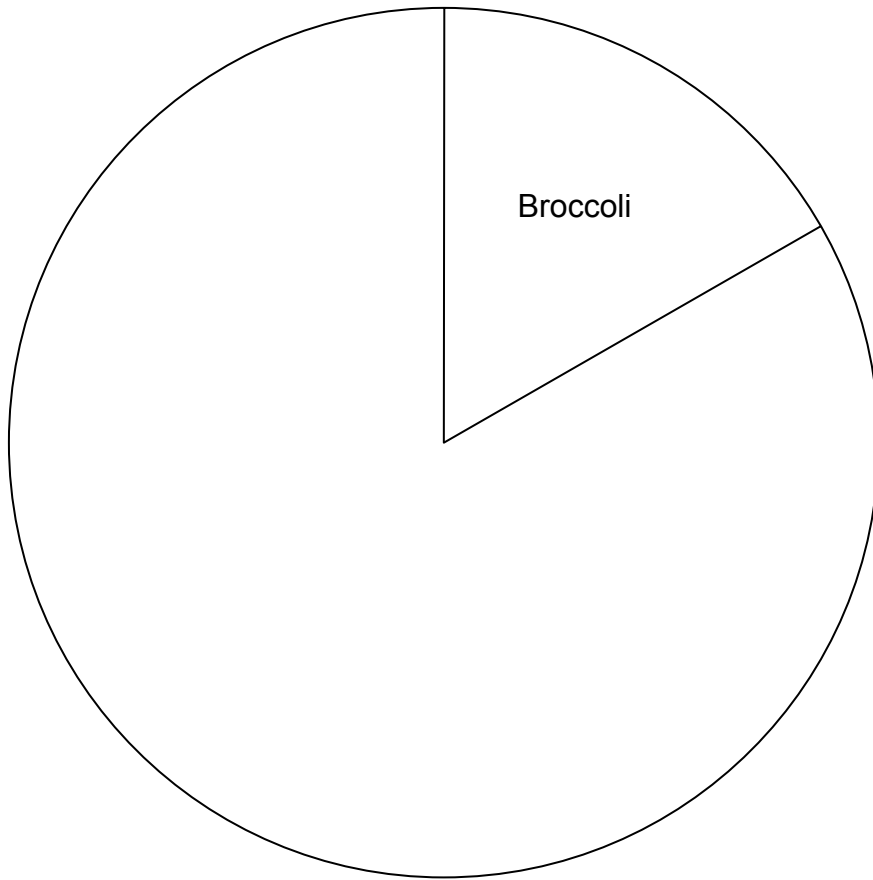...

(2 marks)

10 (b) (ii) Complete the pie chart to represent this information.

Broccoli

(2 marks)

Turn over for the next question

6

11 Jarvis has 6 rods.

Not drawn accurately

3 cm

3 cm

4 cm

4 cm

8 cm

8 cm
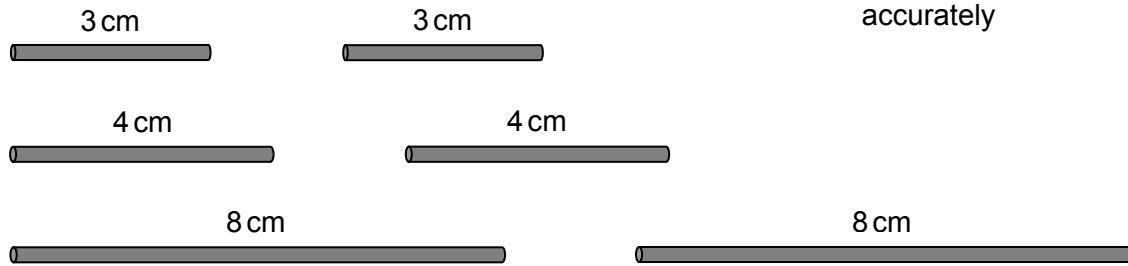
11 (a) He makes **two** isosceles triangles using all six of the rods.

Draw **two** different triangles that he can make using all of the rods.
Show the lengths on each side.

(2 marks)

11 (b) He tries to make a triangle using one rod of each length.

Explain why he **cannot** do this.

....

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....

Answer .... *(1 mark)*

11 (c)   Katie says that it is impossible to have an isosceles triangle with a right angle.

Draw a fully labelled diagram to show that Katie is wrong.

(2 marks)

Turn over for the next question

5

Turn over ▶

✳12   Barbara uses her car to work as a volunteer driver at her local hospital.

She is paid 40p for every mile she drives.

On average she drives 2000 miles each month.

Here is some information about the running costs of Barbara's car.

Fuel Consumption	50 miles per gallon
Other running costs	10 pence per mile

12 (a)   Petrol costs £5 per gallon

Calculate Barbara's monthly fuel bill.

....

....

....

Answer £ .... *(2 marks)*

12 (b)   After paying for fuel and other running costs, Barbara saves the money left over.

Barbara is planning to use this money for a holiday that will cost £3000.

Will Barbara have enough money after saving for one year?

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(4 marks)

13   In a school there are 200 students in year 11.

110 of these students are boys.

What percentage of these students are girls?

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Answer .... % *(3 marks)*

14   Simon leaves home at 9 am and goes for a walk.
He walks at a steady speed of 5 kilometres per hour for 90 minutes.
He stops for 30 minutes.
He then jogs back home and arrives at 12 noon.

14(a)   On the grid below draw a distance-time graph to show Simon's journey.

Distance from home (km)
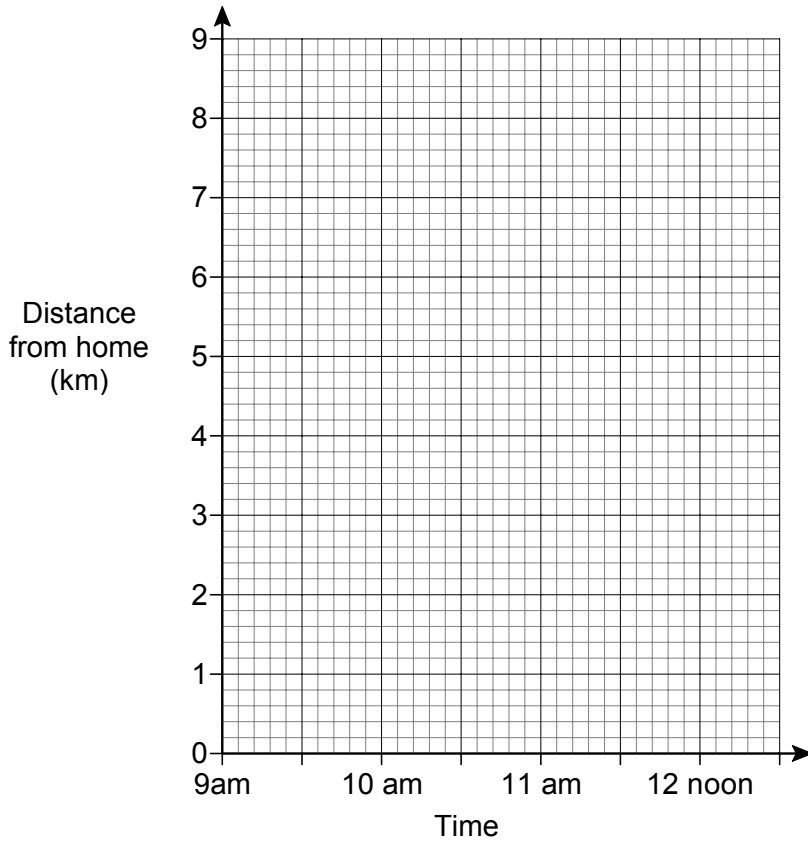
(3 marks)

14(b)   What is Simon's average speed on the return home?

...................................……………..………….....…..

Answer .... km/h *(1 mark)*

Turn over for the next question

13

Turn over ▶

15 (a)   The National Curriculum levels in Mathematics for 30 students in year 9 were recorded.

Level	Number of students	
3	0	
4	4	
5	6	
6	9	
7	8	
8	3	

Calculate the mean level.

....

....

Answer .... *(3 marks)*

15 (b)   The 30 students study both French and Spanish.

Their National Curriculum levels in these subjects are shown in the table.

Level in Spanish

		1	2	3	4	5	6	Total
	1	0	0	0	0	0	0	0
	2	1	0	0	0	0	0	1
Level in French	**3**	2	1	1	0	0	0	4
	4	0	3	4	1	0	0	8
	5	0	1	2	3	2	0	8
	6	0	0	3	3	2	1	9
	Total	3	5	10	7	4	1	30

15 (b) (i) What is the median level for French?

Show clearly how you obtain your answer.

....

....

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....

Answer .... *(2 marks)*

15 (b) (ii) The teacher claims that the students are better at French than at Spanish.

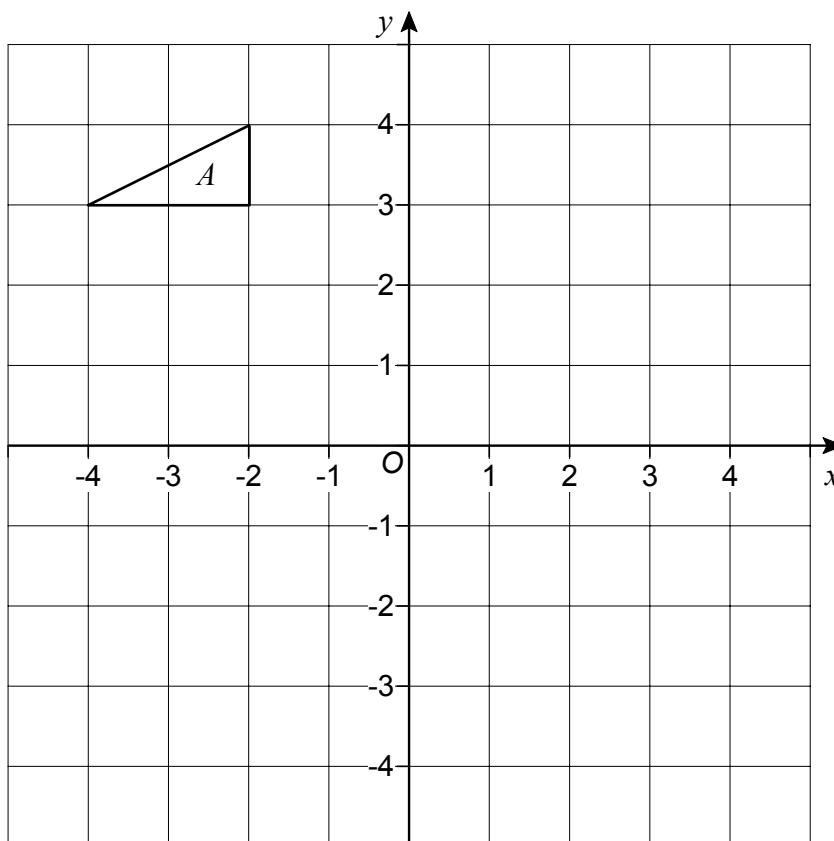How can you tell from the table that this is true?

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....

....

(1 mark)

16 The diagram shows a triangle A, with vertices at (−4, 3), (−2, 3) and (−2, 4).

16 (a) Draw a image of triangle *A* when it is reflected in the line $y = 1$

Label your image *B*.

(2 marks)

16 (b) Draw an image of triangle A when it is rotated 90° clockwise about the origin.

Label your image *C*.

(3 marks)

END OF QUESTIONS

11

There are no questions printed on this page

DO NOT WRITE ON THIS PAGE
ANSWER IN THE SPACES PROVIDED