**Pearson
Edexcel GCSE**

Centre Number

Candidate Number

Mathematics B
Unit 2: Number, Algebra, Geometry 1 (Non-Calculator)
Foundation Tier

Friday 4 November 2016 – Morning Time: 1 hour 15 minutes	Paper Reference **5MB2F/01**

You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser. Tracing paper may be used.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
  – *there may be more space than you need*.
- **Calculators must not be used.**

Information

- The total mark for this paper is 60
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*
- Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed.

Advice

- Read each question carefully before you start to answer it.
- Keep an eye on the time.
- Try to answer every question.
- Check your answers if you have time at the end.
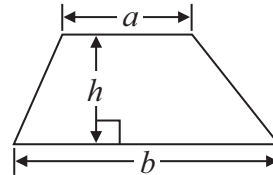
Turn over ▶

P 4 8 2 1 4 A 0 1 1 6

PEARSON

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

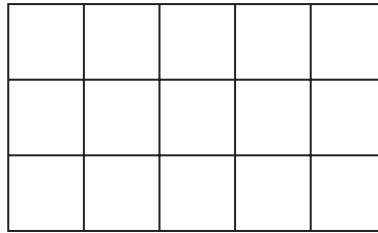**Volume of prism** = area of cross section × length
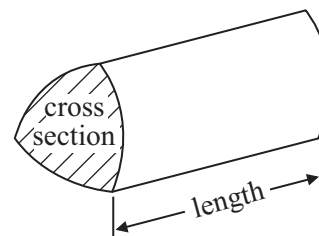
Answer ALL questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

You must NOT use a calculator.

1 (a) Shade $\frac{3}{5}$ of this shape.

(1)

(b) Write 0.75 as a fraction.

....

(1)

(c) Write 0.04 as a percentage.

....%

(1)

(d) Write $\frac{9}{24}$ as a fraction in its simplest form.

....

(1)

(Total for Question 1 is 4 marks)

2 Here are the first four terms of a number sequence.

$$3 \qquad 7 \qquad 11 \qquad 15$$

(a) Write down the next number in this sequence.

....

(1)

(b) Find the 8th term of this sequence.

....

(1)

(c) The number 80 is **not** a term of this sequence.
Explain why.

....

....

....

(1)

(Total for Question 2 is 3 marks)

3 At 7 am the temperature was −4 °C.
By 3 pm the temperature had gone up by 10 °C.

(a) Write down the temperature at 3 pm.

.... °C

(1)

At 9 pm the temperature was −2 °C.
By midnight the temperature had gone down by 7 °C.

(b) Write down the temperature at midnight.

.... °C

(1)

(Total for Question 3 is 2 marks)

4 The table shows the cost of a single train ticket and the cost of a return train ticket.

	Single ticket	**Return ticket**
Cost	£13.60	£20.30

(a) Work out the difference between the cost of two single tickets and the cost of one return ticket.

£.......................................

(3)

Tim catches a train to Bournemouth at 8 57 am.
The train gets to Bournemouth at 9 23 am.

(b) Work out how long the train takes to get to Bournemouth.

....minutes

(1)

Tim catches the 17 23 train home.

(c) Write 17 23 using the 12-hour clock.

....

(1)

(Total for Question 4 is 5 marks)

5 Lily has 3.4 kg of flour.
She uses 500 grams of the flour.
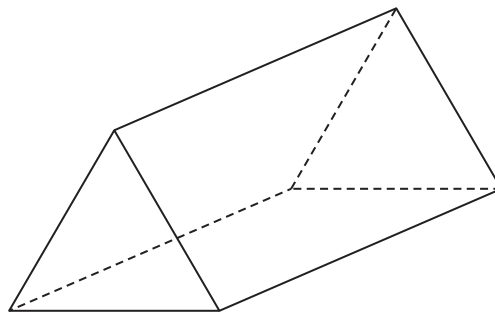
How much flour does Lily have left?

....

(Total for Question 5 is 2 marks)

6 Here is a circle, centre *O*.
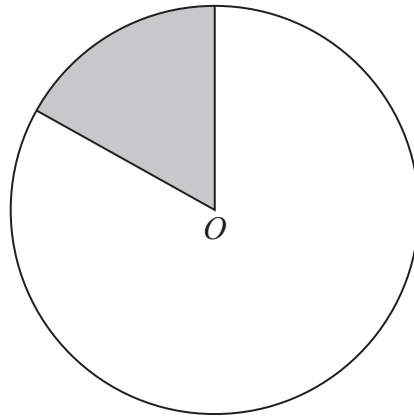
(a) Write down the mathematical name for the shaded region.

....

Here is a 3-D shape.

(b) (i) Write down the mathematical name for the shape.

....

(ii) How many faces does the shape have?

....

(iii) How many vertices does the shape have?

....

(Total for Question 6 is 4 marks)

7 Here are four digits.

<div align="center">6   3   5   9</div>

(a) Write down the largest three-digit number you can make using three of these digits.
You may only use a digit once.

....
(1)

Here are the four digits again.

<div align="center">6   3   5   9</div>

(b) Write down the three-digit number, whose value is closest to 600, that you can make
using three of these digits.
You may only use a digit once.

....
(1)

(Total for Question 7 is 2 marks)

*8 A company has a Norwich office and an Ipswich office.

<div align="center">30 people work in the Norwich office
and 20 people work in the Ipswich office.</div>
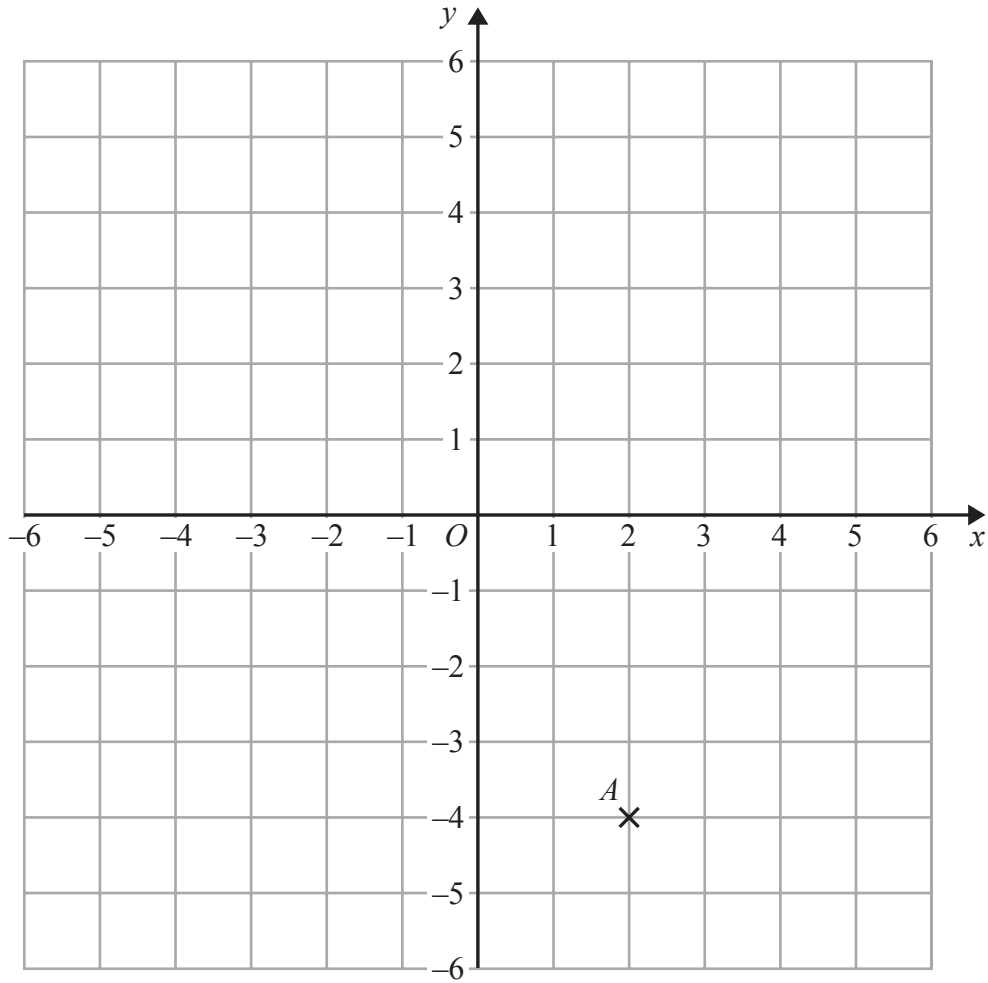
On Tuesday

<div align="center">12 people from the Norwich office go to work in the Ipswich office
and 5 people from the Ipswich office go to work in the Norwich office.</div>

Work out how many people should be working in the Norwich office and how many
people should be working in the Ipswich office on Tuesday.

(Total for Question 8 is 3 marks)

(a) (i) Write down the coordinates of the point *A*.

(........................ , ...)

(ii) On the grid, mark with a cross (×) the point with coordinates (−2, 3).

(2)

(b) On the grid, draw the line with equation *y* = *x*

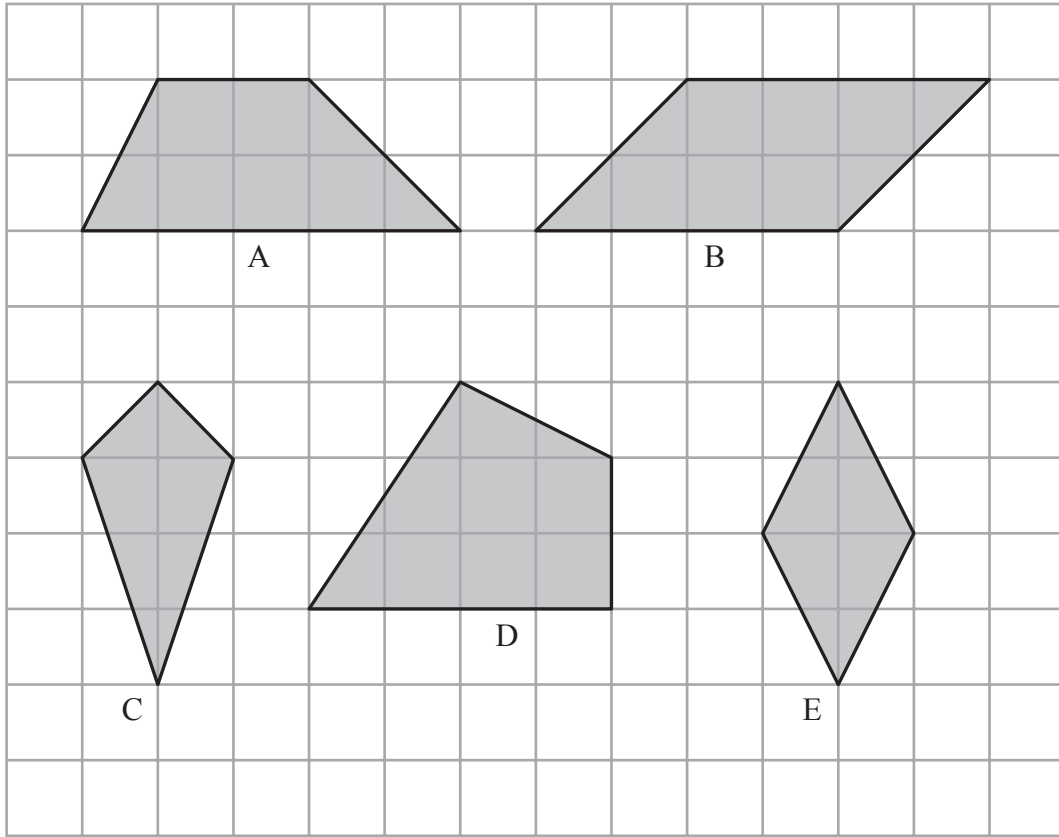**(1)**

(Total for Question 9 is 3 marks)

10 Here are five shapes on a grid of squares.

(a) Write down the letter of the shape that is a rhombus.

....

(1)

(b) How many lines of symmetry does shape C have?

....

(1)

Two of the shapes have rotational symmetry of order 2

(c) Write down the letters of these two shapes.

.... and ....

(1)

(Total for Question 10 is 3 marks)

11 An equilateral triangle has sides of length 8 cm.
A square has the same perimeter as the triangle.

Work out the area of the square.

....

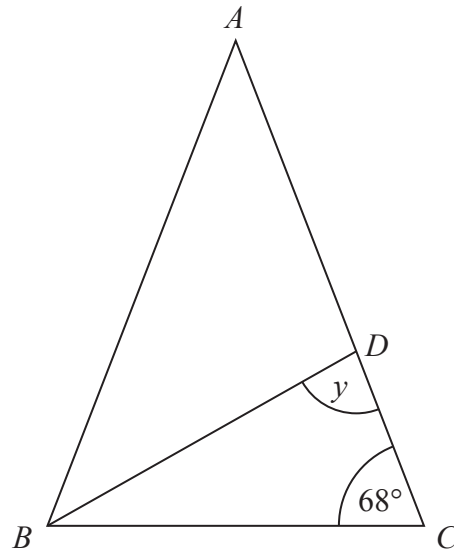**(Total for Question 11 is 5 marks)**

*12

Diagram **NOT** accurately drawn

ABC and *ABD* are both isosceles triangles.
AB = *AC*
DA = *DB*

Work out the size of angle *y*.
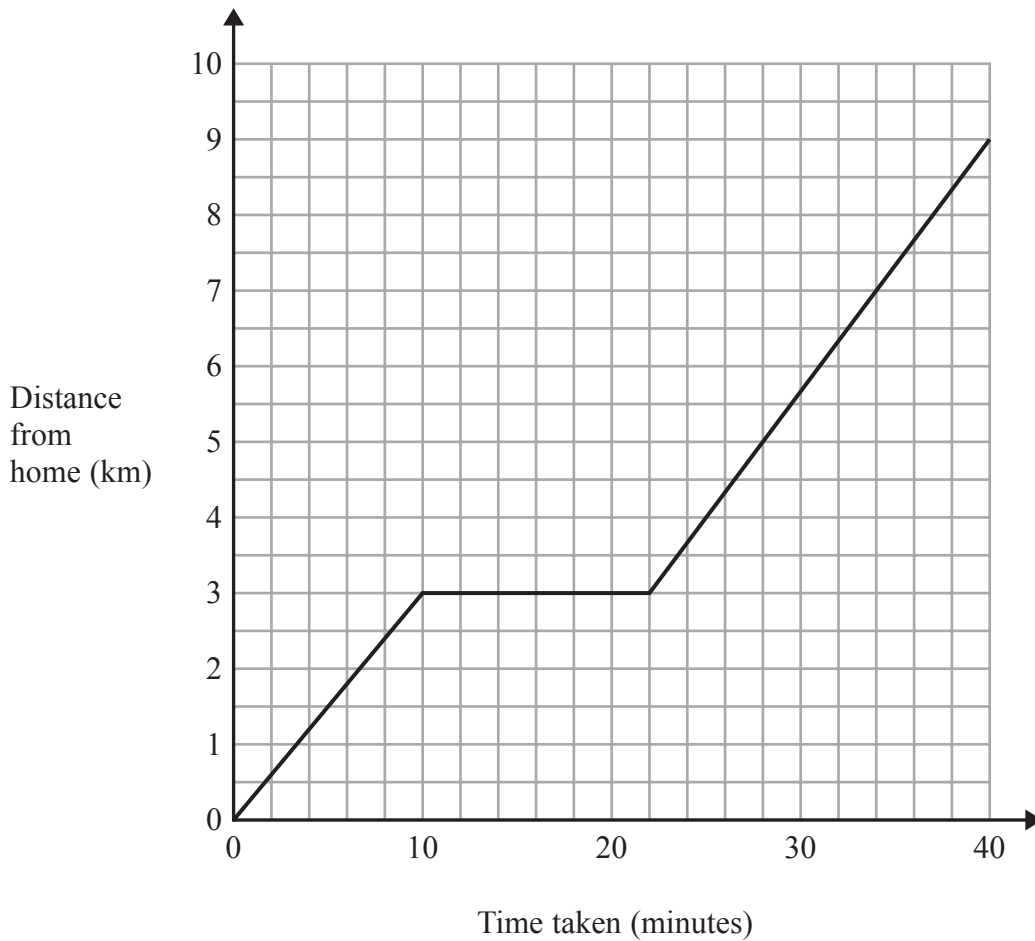You must give reasons for your answer.

(Total for Question 12 is 4 marks)

13 One day Jane cycled from home to college.
She stopped at a shop on the way to college.

The travel graph shows Jane's journey from home to college.

(a) Write down the distance from Jane's home to college.

....km
(1)

(b) Write down how long Jane stopped at the shop.

....minutes
(1)

(Total for Question 13 is 2 marks)

14 Miss Paisley is organising games for the children in her class.
She is going to put the children into teams.

If she puts the children into teams of 4, there will be 2 children left out.
If she puts the children into teams of 5, there will be 3 children left out.

Work out the smallest possible number of children in Miss Paisley's class.

....

(Total for Question 14 is 3 marks)

*15 Tina is going from London to the French town of Lille.

Tina will drive from London to Dover.
She will go on the ferry from Dover to Calais.
She will then drive from Calais to Lille.

The distance from London to Dover is 80 miles.
The distance from Calais to Lille is 120 km.

5 miles = 8 km

Tina has enough fuel in her car to drive 150 miles.

Does she have enough fuel to get from London to Lille?
You must show all your working.

(Total for Question 15 is 3 marks)

16 (a) Expand and simplify $7a + 4(a - 2b)$

....

(2)

(b) Simplify $n^6 \times n^5$

....

(1)

(c) Factorise $5x + 10$

....

(1)

(Total for Question 16 is 4 marks)

17 A supermarket car park has 200 spaces.
10% of the spaces are for staff.

The other spaces are for disabled people, for parents and for other customers
in the ratio 1 : 2 : 7

Paul is going to paint a sign for each of the spaces for staff, for disabled people and for parents.
He is **not** going to paint signs for the spaces for other customers.

Work out the total number of spaces Paul is going to paint a sign for.

....

(Total for Question 17 is 4 marks)

18 Here is a prism.

1.5 cm

3 cm

10 cm

10 cm

3 cm

2 cm 4 cm 2 cm
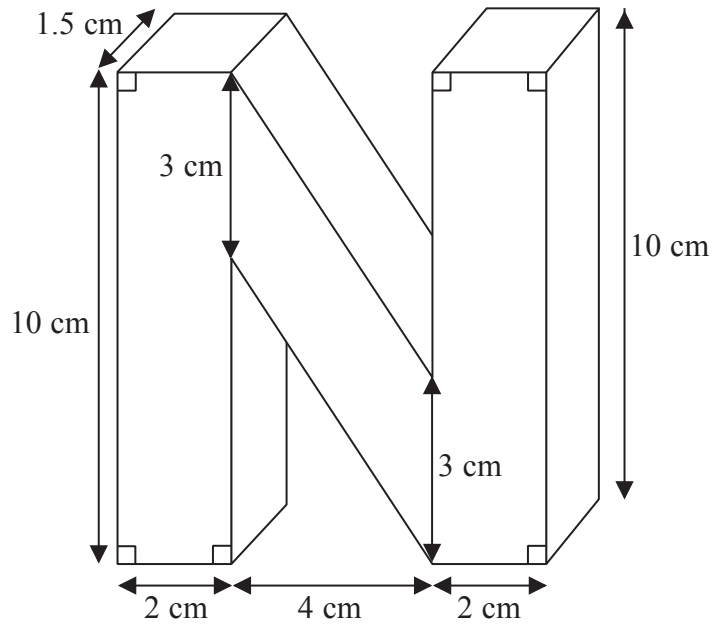
Diagram **NOT** accurately drawn

Work out the volume of the prism.

....cm³

(Total for Question 18 is 4 marks)

TOTAL FOR PAPER IS 60 MARKS