

Write your name here

Surname

Other names

**Pearson**  
**Edexcel GCSE**

Centre Number

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Candidate Number

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# Mathematics B

**Unit 3: Number, Algebra, Geometry 2 (Calculator)**

**Foundation Tier**

Tuesday 8 November 2016 – Morning

**Time: 1 hour 30 minutes**

Paper Reference

**5MB3F/01**

**You must have:** Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB pencil, eraser, calculator. 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 may be used.**
- If your calculator does not have a  $\pi$  button, take the value of  $\pi$  to be 3.142 unless the question instructs otherwise.



## Information

- The total mark for this paper is 80
- 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 ►

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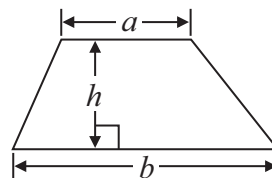
**PEARSON**

## GCSE Mathematics 2MB01

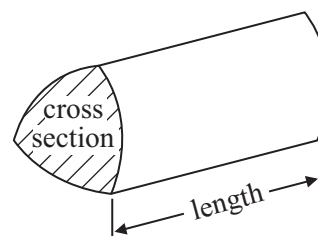
Formulae: Foundation Tier

**You must not write on this formulae page.  
Anything you write on this formulae page will gain NO credit.**

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



$$\text{Volume of prism} = \text{area of cross section} \times \text{length}$$



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**Answer ALL questions.**

**Write your answers in the spaces provided.**

**You must write down all stages in your working.**

**1** Here is a straight line.



(a) Draw a line at least 5 cm long that is parallel to the straight line.

(1)

(b) Draw a circle of radius 4 cm.

Use the cross (×) as the centre of your circle.

×

(1)

**(Total for Question 1 is 2 marks)**



P 4 8 2 3 1 A 0 3 2 0

- 2 Jill buys a toy, a doll and a game at a school fair.  
She then sells all three items.

The table gives some information about these items.

Item	Buys	Sells	Profit
Toy	£2.00	£3.00	£1.00
Doll	£3.00	£ .....	£1.50
Game	£5.00	£6.40	£ .....
		<b>Total profit</b>	£ .....

Complete the table.

(Total for Question 2 is 3 marks)

- \*3 Ami and Belinda are in a gymnastics competition.

Here are their scores.

	floor	vault	bars	beam
<b>Ami</b>	13.2	15.3	14.7	16.0
<b>Belinda</b>	14.3	13.8	15.9	15.7

Who got the higher total score, Ami or Belinda?  
You must show your working.

(Total for Question 3 is 3 marks)

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4 (a) Solve  $7x = 42$

$$x = \dots\dots\dots (1)$$

(b) Solve  $p + 7 = 11$

$$p = \dots\dots\dots (1)$$

(c) Solve  $17 - g = 11$

$$g = \dots\dots\dots (1)$$

(d) Solve  $8q - 3 = 23$

$$q = \dots\dots\dots (2)$$

(e)  $v = u + 5t$   
 $u = 4$   
 $t = 3$

Work out the value of  $v$ .

$$v = \dots\dots\dots (2)$$

(Total for Question 4 is 7 marks)

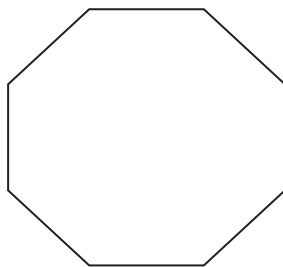
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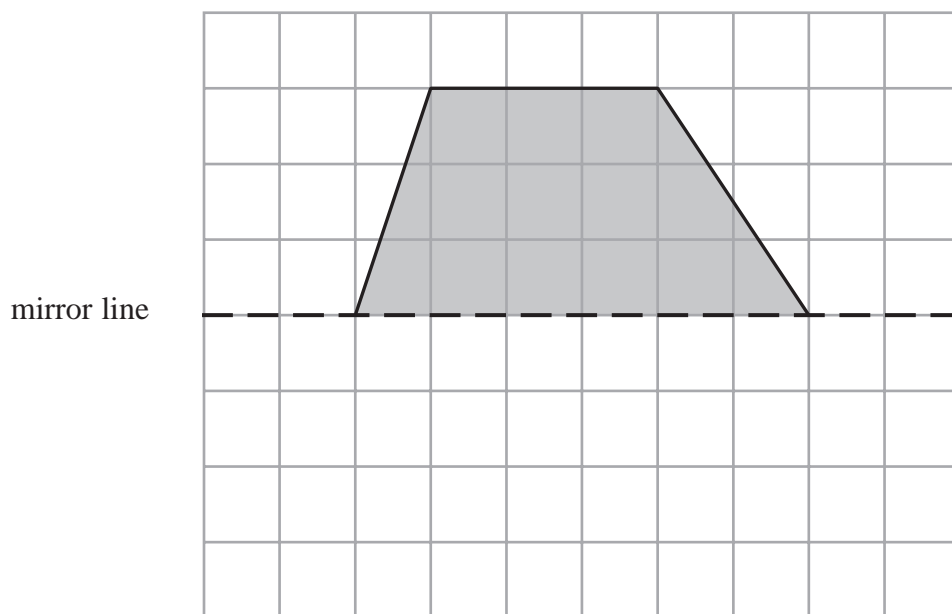
5 Here is a polygon.



(a) Write down the mathematical name of this polygon.

.....  
(1)

(b)



Reflect the shaded shape in the mirror line.

(1)

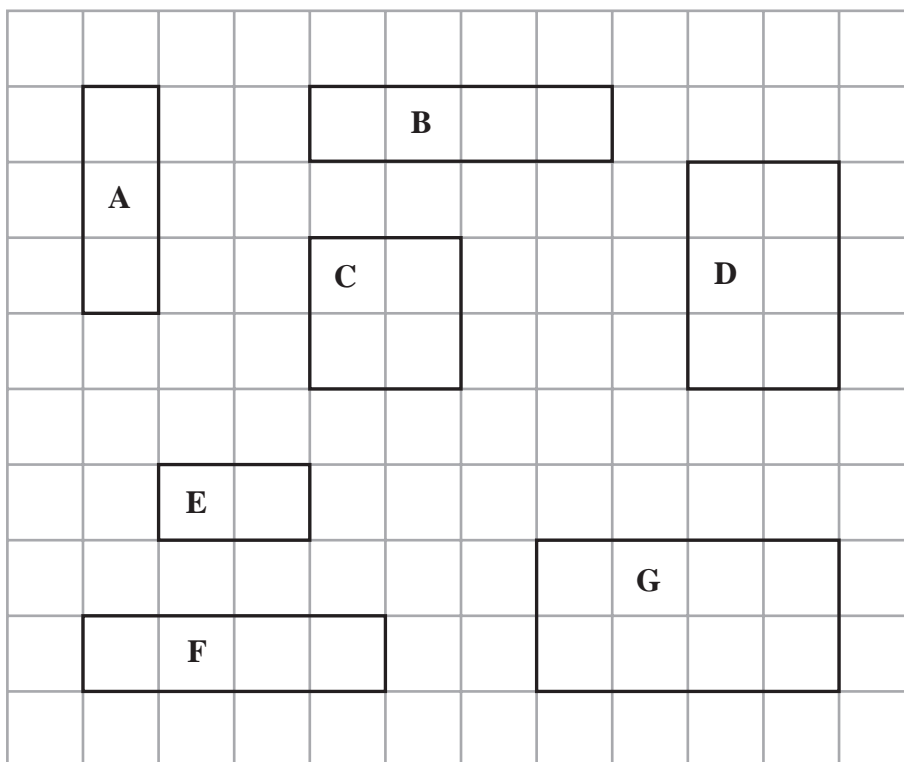
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Here are seven rectangles on a grid.



Two of the rectangles are congruent.

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

..... and .....  
(1)

One of the rectangles is similar to rectangle E.

(d) Write down the letter of this rectangle.

.....  
(1)

(Total for Question 5 is 4 marks)



- 6 Here is a rule to work out the time it takes to cook a piece of meat.

$$\text{Time in minutes} = 36 \times \text{weight in kg} + 30$$

A piece of meat has a weight of 4 kg.

- (a) Use the rule to work out the time, in minutes, it takes to cook this piece of meat.

.....minutes  
(2)

It takes 192 minutes to cook a different piece of meat.

- (b) Work out the weight of this piece of meat.

.....kg  
(3)

**(Total for Question 6 is 5 marks)**

- 7 Martin thinks of a number.

He multiplies this number by 3

He then subtracts 5

The result is 22

What number did Martin think of ?

.....

**(Total for Question 7 is 3 marks)**

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8 There are 8 kg of sand in a container.

The sand is going to be put into bags.

$\frac{3}{4}$  kg of sand will be put into each bag.

(a) How many bags can be filled with sand from the container?

.....  
(2)

(b) Write 40 as a fraction of 200

.....  
(1)

**(Total for Question 8 is 3 marks)**

9 Here is a scale drawing of the plan of a room.



Scale: 2 cm represents 1 m

Work out the total length around the edge of the room.

Give your answer in metres.

.....metres

**(Total for Question 9 is 3 marks)**



\*10 Sally wants her two children to go to a nursery for 3 days each week.

The box shows how much Sally will need to pay the nursery.

Up to 3 years old	£45 per day
More than 3 years old	£37 per day

Sally's two children are 2 years old and 4 years old.

Sally can only pay up to £250 each week for her two children to go to a nursery.

Can Sally pay for her two children to go to this nursery?

You must show all your working.

(Total for Question 10 is 4 marks)

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**11** Mick buys

apples for    £1.79  
 milk for       £1.20  
 cheese for    £3.53

He also buys

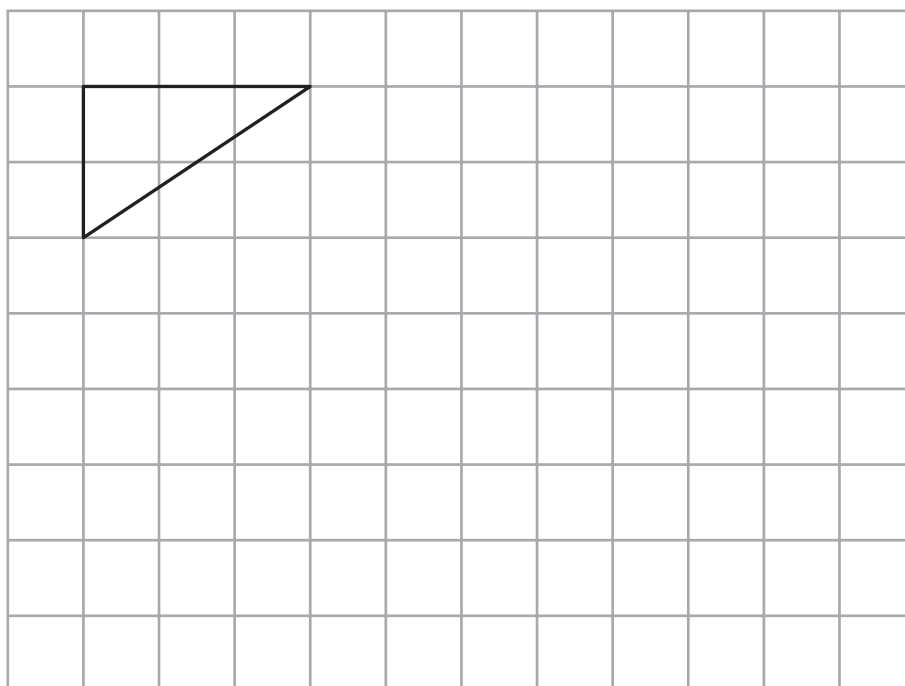
3 tins of beans at 48p each  
 and a pack of sausages.

Mick pays a total of £9.60

Work out how much he pays for the sausages.

£.....

**(Total for Question 11 is 4 marks)**

**12** Draw an enlargement, scale factor 2, of the triangle.

**(Total for Question 12 is 2 marks)**



**13** A ticket for a show costs £46

Sofyan has £180 to spend on tickets.  
He buys as many tickets as possible.

How much money does Sofyan have left?

£.....

**(Total for Question 13 is 3 marks)**

**14** Use your calculator to work out

(i)  $-5 - 6$

.....

(ii)  $1.3^2$

.....

(iii)  $\sqrt{12.25}$

.....

(iv)  $8^3$

.....

**(Total for Question 14 is 4 marks)**

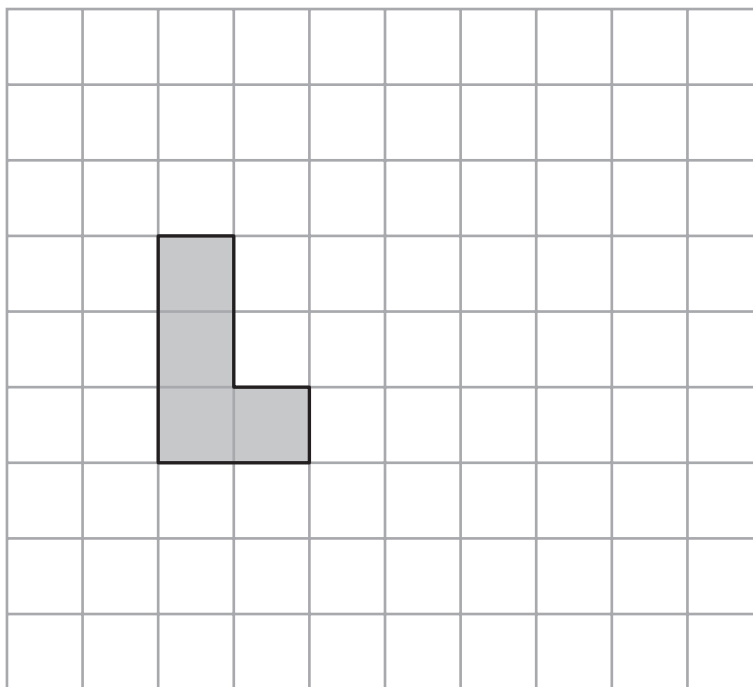
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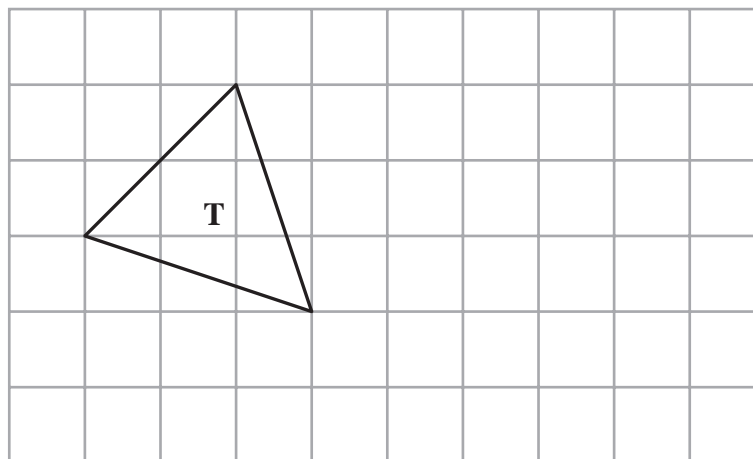


- 15 (a) On the grid, show how the shaded shape will tessellate.  
You should draw at least **six** more shapes.



(2)

- (b) On the grid below, draw a shape that is congruent to shape **T**.



(1)

(Total for Question 15 is 3 marks)

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- 16 Harry invests £5000 for 3 years.  
He gets simple interest of 4% per year.

Work out the total interest Harry gets.

£.....

(Total for Question 16 is 3 marks)

- 17 Make  $h$  the subject of the formula  $G = 3h - 5$

.....  
(Total for Question 17 is 2 marks)

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**\*18** The normal price of a watch is £80 in two shops, Tymes and Sekonds.

Both shops have a sale.

In Tymes the normal price of the watch is reduced by £18

In Sekonds the normal price of the watch is reduced by 20%

Which shop is selling the watch for the cheaper price in the sale?

You must show your working.

(Total for Question 18 is 3 marks)

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P 4 8 2 3 1 A 0 1 5 2 0

19 There are

- $x$  stamps in a small packet
- $(x + 3)$  stamps in a medium packet
- and  $(x + 4)$  stamps in a large packet

The total number of stamps in the three packets is  $N$ .

- (i) Write down an equation for  $N$  in terms of  $x$ .  
Give your equation in its simplest form.

There is a total of 61 stamps.

- (ii) Work out the number of stamps in the medium packet.

(Total for Question 19 is 5 marks)

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20 (a) Write 3500 ml in litres.

..... litres  
(1)

(b) Write 3 kilograms in grams.

..... grams  
(1)

(c) Change 3 m<sup>2</sup> to cm<sup>2</sup>.

..... cm<sup>2</sup>  
(2)

(Total for Question 20 is 4 marks)

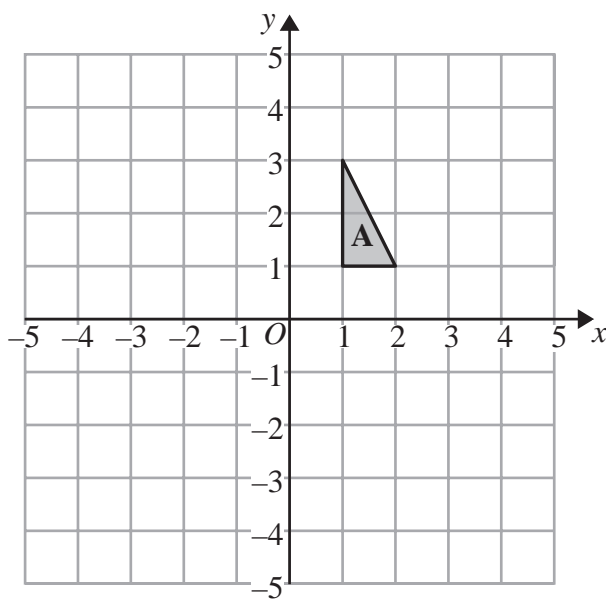
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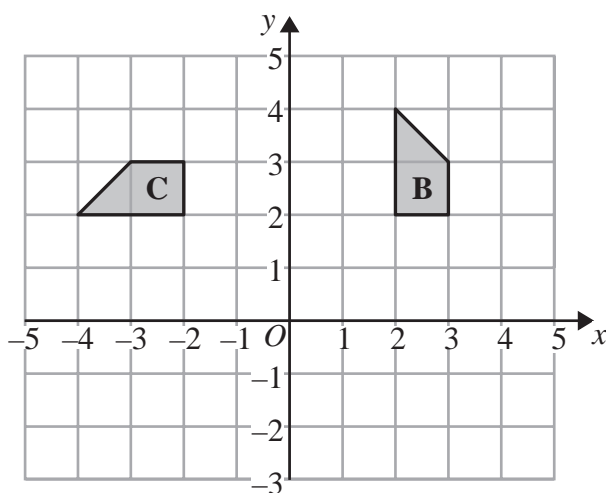
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21



- (a) On the grid above, translate shape **A** by the vector  $\begin{pmatrix} -3 \\ -1 \end{pmatrix}$  (2)



- (b) Describe fully the single transformation that maps shape **B** onto shape **C**.

.....

.....

.....

(3)

(Total for Question 21 is 5 marks)



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**\*22** There are 1 million gallons of water in a lake.

A company has to pump all the water out of the lake.

The company can use 4 Speedy pumps or 5 Flow pumps.

One Speedy pump can pump 35 gallons out of the lake in 1 minute.

One Flow pump can pump all the water out of the lake in 500 hours.

The company wants to pump all the water out of the lake as quickly as possible.

Should the company use the 4 Speedy pumps or the 5 Flow pumps?

You must show all your working.

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**(Total for Question 22 is 5 marks)**

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**TOTAL FOR PAPER IS 80 MARKS**

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