Write your name here

Surname	Other names

Edexcel GCSE

Centre Number	Candidate Number

Mathematics B

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

Foundation Tier

Wednesday 6 March 2013 – 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 π button, take the value of π 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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6/6/8/3/

P 4 2 0 5 4 A 0 1 2 4

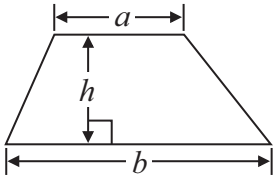
PEARSON

GCSE Mathematics 2MB01

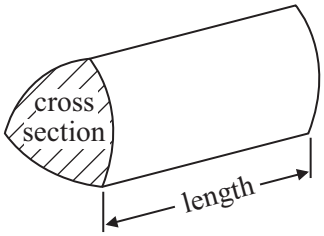
Formulae: Foundation Tier

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

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.

1 (a) Write 0.1 as a fraction.

.....

(1)

(b) Write $\frac{1}{4}$ as a decimal.

.....

(1)

(Total for Question 1 is 2 marks)

2 Use your calculator to work out

(a) 5.7×6.3

.....

(1)

(b) $\sqrt{1.44}$

.....

(1)

(c) 1.9^3

.....

(1)

(d) $\frac{1}{0.625}$

.....

(1)

(Total for Question 2 is 4 marks)

3 (a) Change 300 cm to m.

..... m

(1)

(b) Change 5800 g to kg.

..... kg

(1)

(c) Change 8.5 cm to mm.

..... mm

(1)

(Total for Question 3 is 3 marks)

4 Here is a 6-sided polygon.

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

.....

(1)

(b) How many sides has a pentagon?

.....

(1)

(Total for Question 4 is 2 marks)

5 Jo buys

120 bunches of daffodils for a total of £80

and 80 bunches of tulips for a total of £50

Jo then sells the flowers in a market.

In the morning, Jo sells

75 bunches of the daffodils for 80p a bunch

and 50 bunches of the tulips for 90p a bunch.

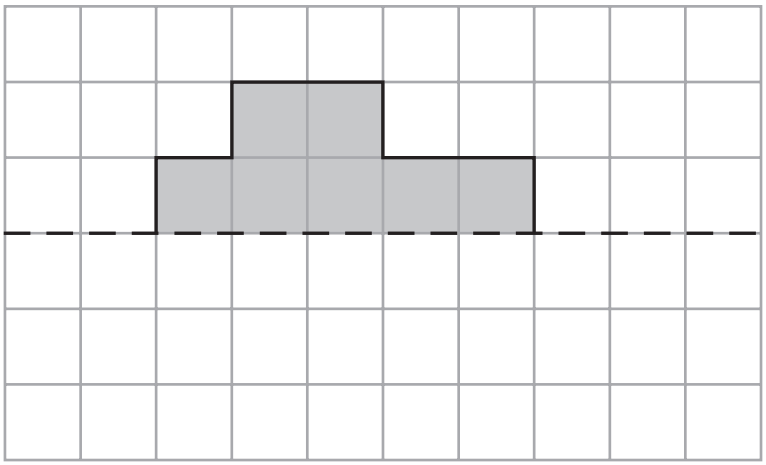
In the afternoon, Jo sells all the bunches of flowers she has left for 20p a bunch.

Does Jo make a profit?
You must show all your working.

.....

(Total for Question 5 is 4 marks)

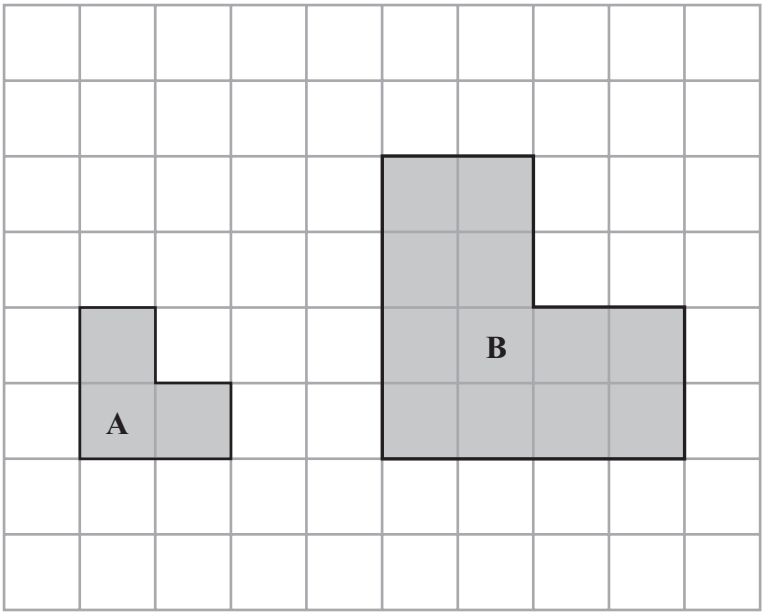
6 (a) A shaded shape is shown on the grid.



Reflect the shaded shape in the mirror line.

(1)

(b)



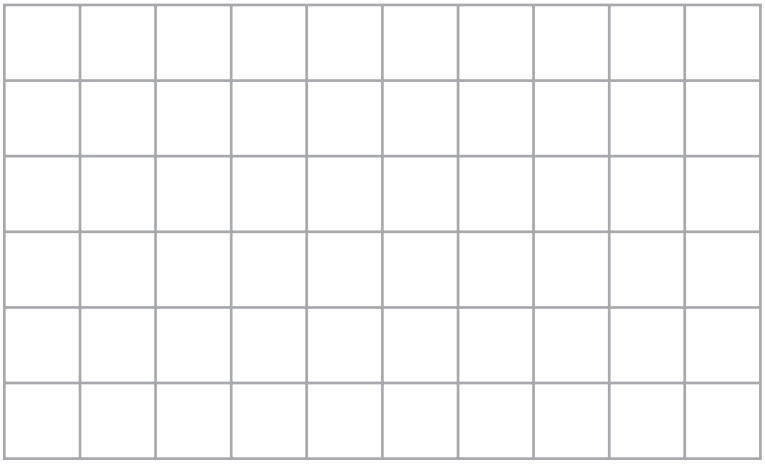
Shape **B** is an enlargement of shape **A**.

Write down the scale factor of the enlargement.

.....

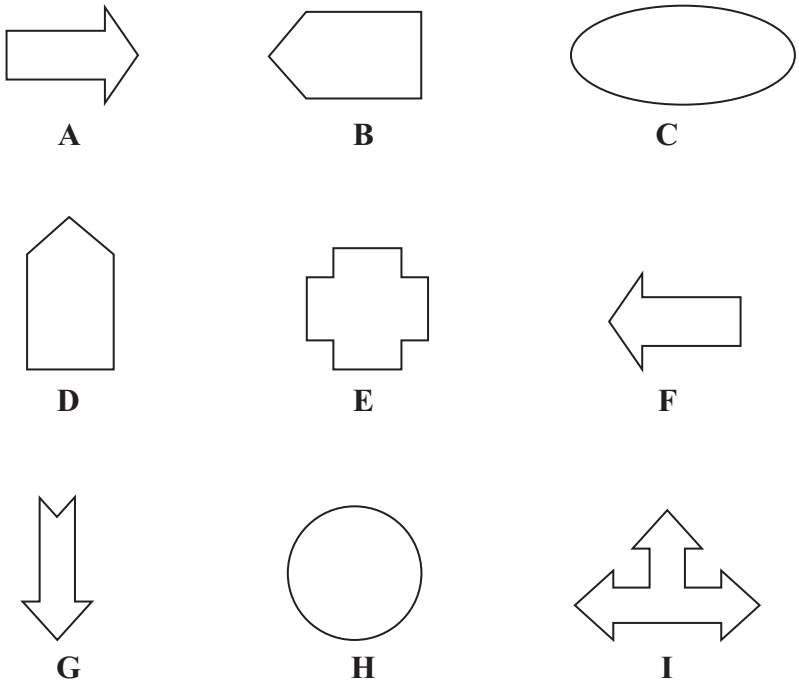
(1)

(c) On the grid, draw two parallel lines.



(1)

(d) Here are some shapes.



Write down the letters of two shapes that are congruent.

..... and .....

(1)

(Total for Question 6 is 4 marks)

***7** Tony runs to keep fit.
He wants to run a total of 20 km each week.

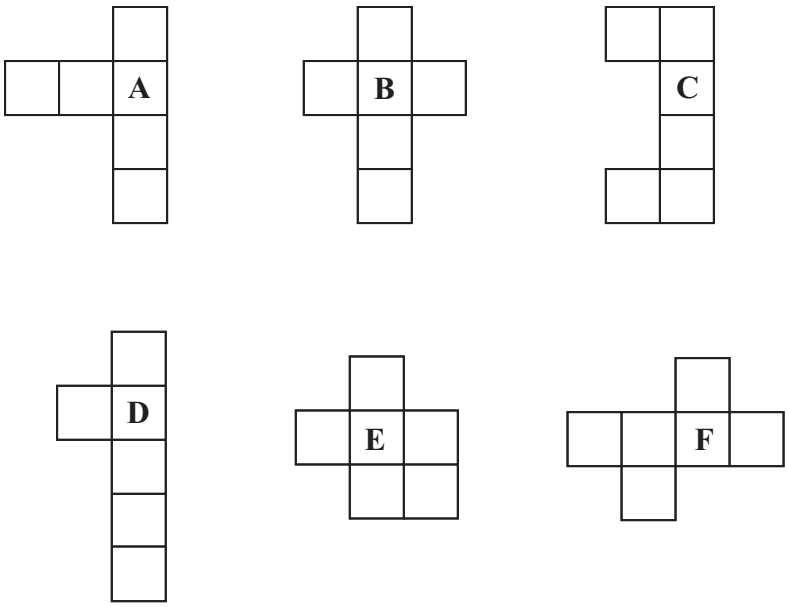
Here are the distances Tony ran last week.

6.25 km 4 km 750 metres $8\frac{1}{2}$ km

Did Tony run 20 km last week?
You must show how you got your answer.

(Total for Question 7 is 3 marks)

8 Here are some shapes made from squares.



Two of these shapes are nets of a cube.

Which two shapes?

.....

(Total for Question 8 is 2 marks)

9 Stephen is making soup.

He mixes one packet of soup with water to make 6 litres of soup.

Stephen has to make 90 bowls of soup.
He wants to put 0.2 litres of soup into each bowl.

How many packets of soup does Stephen need?

..... packets

(Total for Question 9 is 3 marks)

10 Logan says,

"140 millilitres is more than 1.2 litres".

Is he right?
You must explain your answer.

.....

.....

.....

(Total for Question 10 is 2 marks)

11 Here is part of Gary's electricity bill.

Electricity bill	
Old reading	New reading
6214 units	8650 units

(a) Work out the number of units of electricity Gary used.

..... units

(1)

Each unit of electricity costs 11p.

(b) Work out the cost of the electricity Gary used.

.....

(3)

(Total for Question 11 is 4 marks)

12 (a) Solve $a + a = 18$

$a =$ .....

(1)

(b) Solve $b - 4 = 8$

$b =$ .....

(1)

(c) Solve $7c = 28$

$c =$ .....

(1)

$P = 2x + 3y$
$x = 5$
$y = 4$

(d) Work out the value of P.

$P =$ .....

(2)

(Total for Question 12 is 5 marks)

13 Jade wants to paint a wall.

The paint is sold in three sizes of tin.

The table gives information about the tins of paint.

Size of tin	Cost
1 litre	£6
3 litres	£15
5 litres	£23.50

1 litre of this paint covers an area of 8 m^2.
The wall has an area of 112 m^2.

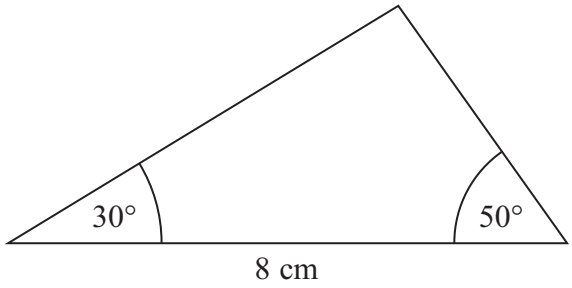
Work out the cheapest cost of the paint Jade needs.

£ .....

(Total for Question 13 is 4 marks)

14

Diagram **NOT** accurately drawn



In the space below, make an accurate drawing of the triangle.

(Total for Question 14 is 3 marks)

***15** Here are two schemes for investing £2500 for 3 years.

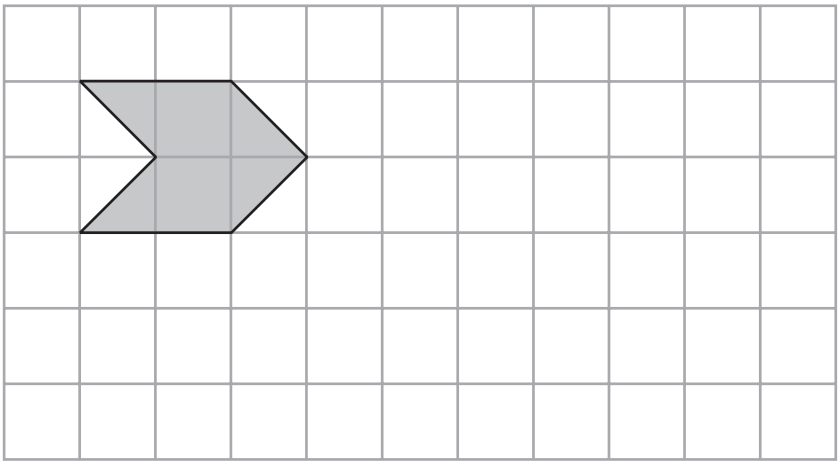
Scheme A
gives £5.35 interest each month.

Scheme B
gives 3% simple interest each year.

Which scheme gives the most total interest over the 3 year period?
You must show all your working.

(Total for Question 15 is 4 marks)

16 On the grid below, show how the shape tessellates.
You must draw at least 6 more shapes.



(Total for Question 16 is 2 marks)

17 Here is a triangle.

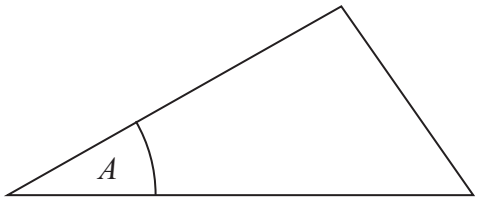


Diagram **NOT** accurately drawn

The perimeter of the triangle is 10 cm.
Angle $A = 40°$.

The triangle is enlarged by a scale factor of 3

(i) Write down the perimeter of the enlarged triangle.

..... cm

(ii) Write down the size of angle A in the enlarged triangle.

°
.....

(Total for Question 17 is 2 marks)

18

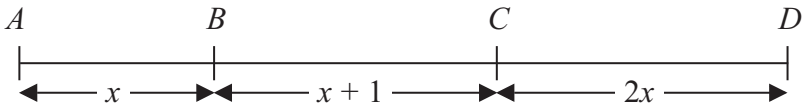


Diagram **NOT** accurately drawn

In the diagram,

$AB = x$ cm
$BC = (x + 1)$ cm
$CD = 2x$ cm

$AD = 19$ cm

(a) Show that $4x + 1 = 19$

(2)

(b) Solve $4x + 1 = 19$

$x =$ .....

(2)

(c) Work out the length of BD.

$BD =$ ..... cm

(2)

(Total for Question 18 is 6 marks)

19 Here is a scale drawing of Gilda's garden.

Scale: 1 cm represents 1 m

Gilda is going to plant an elm tree in the garden.

She must plant the elm tree at least 4 metres from the oak tree.

On the diagram, show by shading the region where Gilda can plant the elm tree.

(Total for Question 19 is 2 marks)

20 The diagram shows two regular shapes.

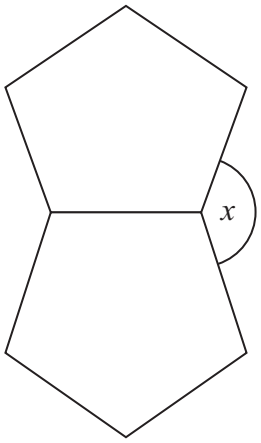


Diagram **NOT** accurately drawn

Work out the size of the angle marked x.

.....°

(Total for Question 20 is 3 marks)

***21** Zara is the manager of a shop.

The table gives information about the expenses the shop had last year.

Expense	Wages	Rent	Goods	Other expenses
Amount	£92 000	£10 800	£72 000	£7000

This year

the wages will increase by 7.5%,

the rent will be $\frac{7}{9}$ of the rent last year,

the other expenses will halve.

Zara wants to increase the amount of money she spends on goods.

She also wants the total expenses the shop has this year to be the same as last year.

Can Zara increase the amount of money she spends on goods?

(Total for Question 21 is 4 marks)

22 $-4 < n \leqslant 1$

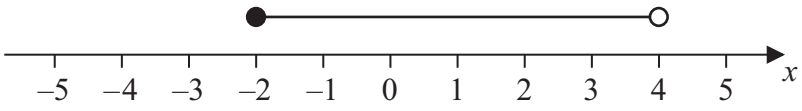
n is an integer.

(a) Write down all the possible values of n.

.....

(2)

(b) Write down the inequalities represented on the number line.



.....

(2)

(Total for Question 22 is 4 marks)

23 The diagram shows a semicircle drawn inside a rectangle.

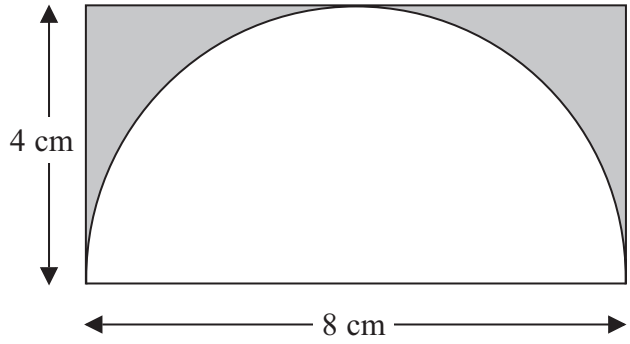


Diagram **NOT** accurately drawn

The semicircle has a diameter of 8 cm.
The rectangle is 8 cm by 4 cm.

Work out the area of the shaded region.
Give your answer correct to 3 significant figures.

..... cm^2

(Total for Question 23 is 4 marks)

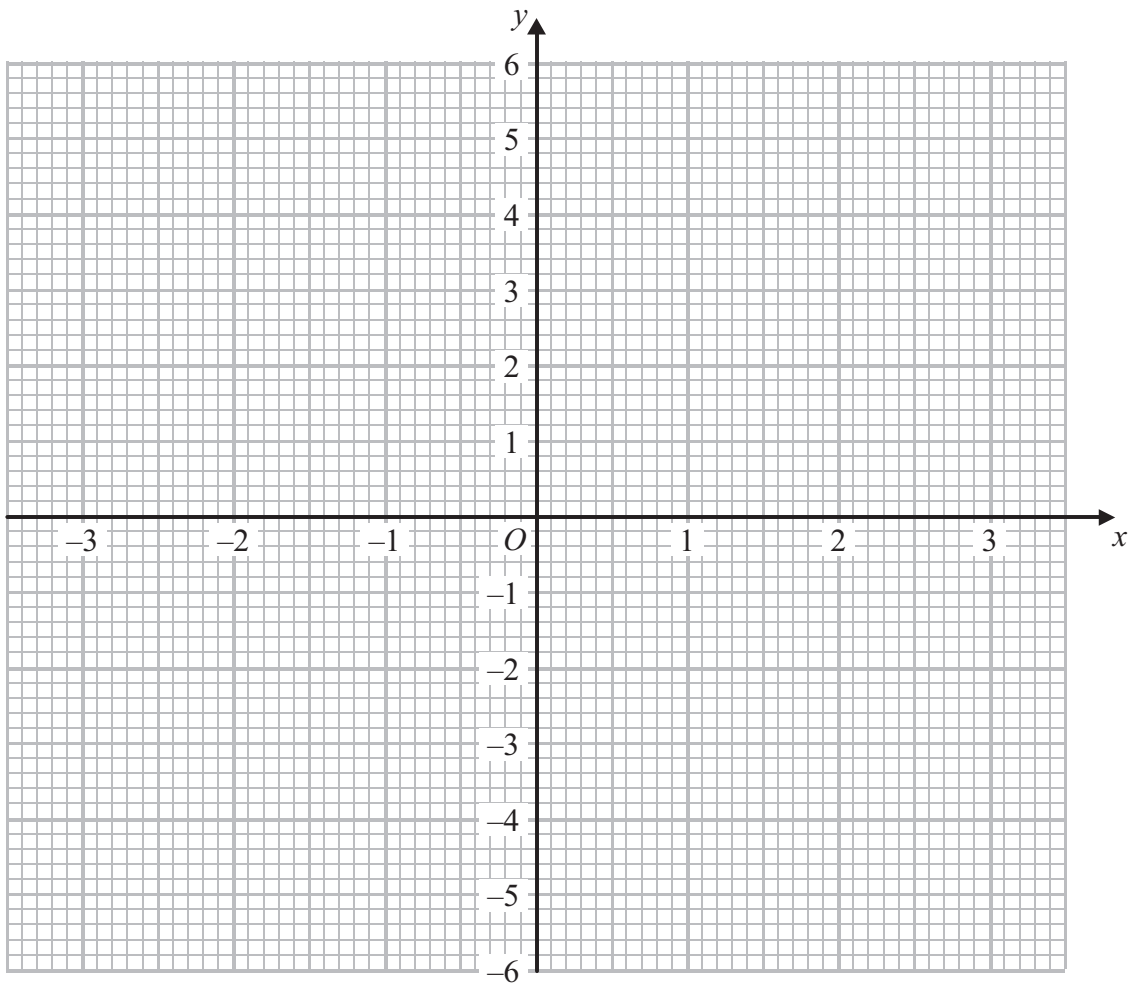
Turn over for Question 24

24 (a) Complete the table of values for $y = x^2 - 4$

x	−3	−2	−1	0	1	2	3
y		0	−3			0	5

(2)

(b) On the grid, draw the graph of $y = x^2 - 4$ for $x = -3$ to $x = 3$



(2)

(Total for Question 24 is 4 marks)

TOTAL FOR PAPER IS 80 MARKS

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