

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

Monday 8 June 2015 – 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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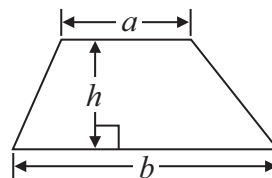
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GCSE Mathematics 2MB01

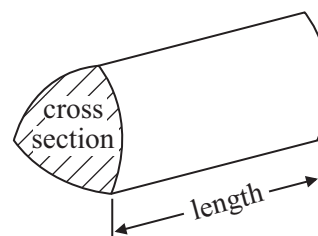
Formulae: Foundation Tier

**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 \times length



Answer ALL questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

1 Use your calculator to find the value of

(a) 2.6×1.7

.....
(1)

(b) $\frac{21}{0.3}$

.....
(1)

(c) $\sqrt{6.25}$

.....
(1)

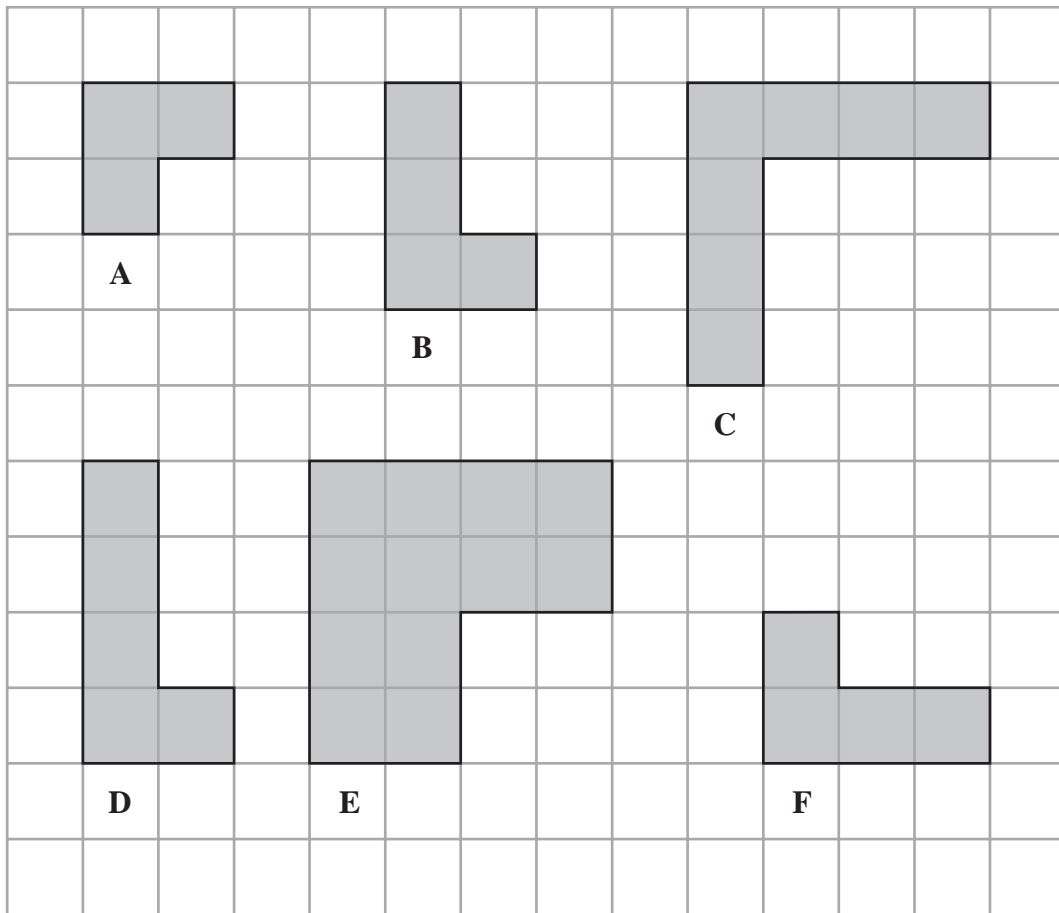
(d) 1.5^3

.....
(1)

(Total for Question 1 is 4 marks)



2 Here are six shapes on a grid of centimetre squares.



Two of the shapes are congruent.

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

..... and
(1)

One of the shapes is similar to shape E.

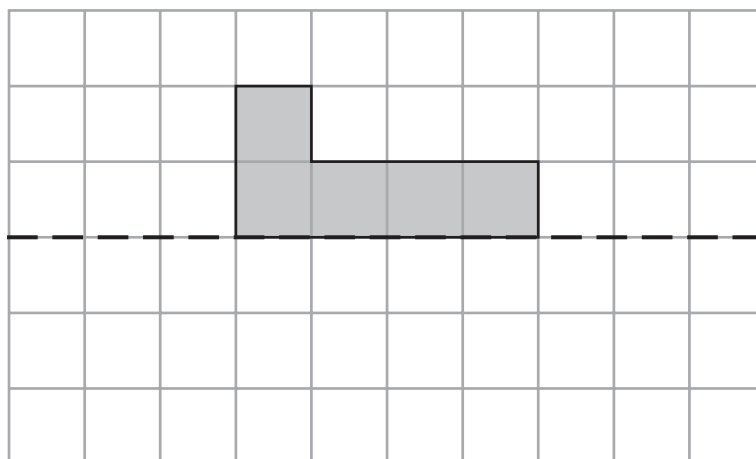
(b) Write down the letter of this shape.

.....
(1)

(Total for Question 2 is 2 marks)



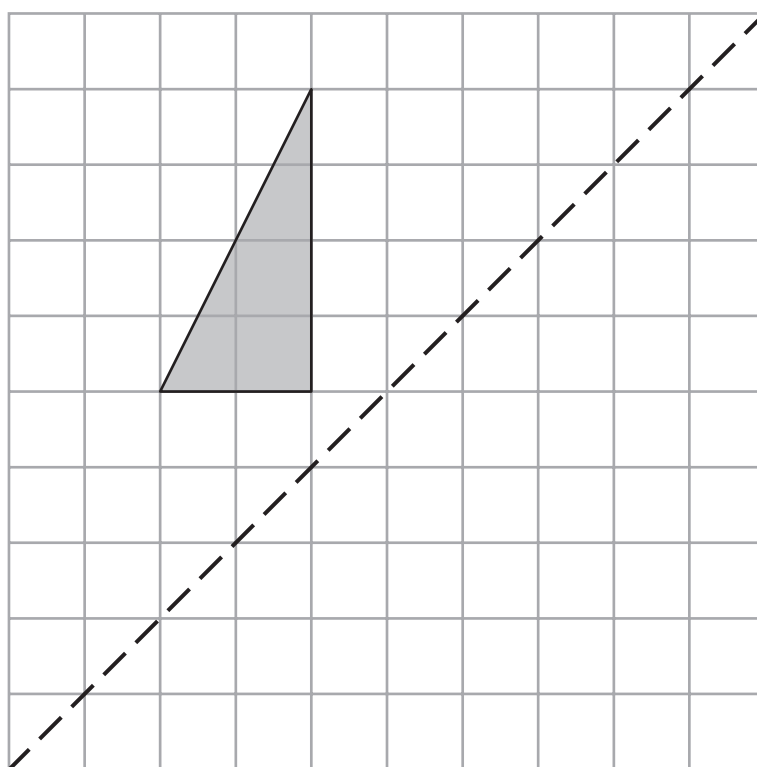
3 (a) Reflect the shaded shape in the mirror line.



mirror line

(1)

(b) Reflect the shaded shape in the mirror line.



mirror line

(2)

(Total for Question 3 is 3 marks)



4 Here are the prices of drinks and snacks in a cafe.

Drinks		Snacks	
tea	50p	cheese roll	£1.20
coffee	60p	samosa	£1.10
lemonade	40p	hot dog	£1.40
		baked potato	£1.60

Barry buys a tea, a hot dog and a cheese roll.

(a) Work out the total cost.

£.....
(2)

Naomi buys a drink and a snack.

She pays with 3 pound coins.

She gets 80p change.

(b) Which drink and which snack did Naomi buy?

..... and
(2)

(Total for Question 4 is 4 marks)



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

.....
(1)

(b) Write 0.15 as a fraction.

.....
(1)

(c) Write 17 out of 40 as a fraction.

.....
(1)

(Total for Question 5 is 3 marks)

6 Ellis thinks of a number.
He multiplies it by 4 and then subtracts 10
The result is 14

What number did Ellis think of?

.....
(Total for Question 6 is 3 marks)



- 7 Billy sells apples in bags.
There are 8 apples in each bag he sells.

On Monday morning Billy has 116 apples.
On Monday afternoon he sells 12 bags of apples.

On Tuesday morning Billy gets 86 more apples.
On Tuesday afternoon he sells 9 bags of apples.

Work out how many apples Billy now has.

.....
(Total for Question 7 is 4 marks)

- 8 15 cars were driven onto a ferry.

4 cars had a driver but **no** passengers.
6 cars had a driver and 1 passenger.
5 cars had a driver and 2 passengers.

Work out the total number of people in the 15 cars.

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



- *9 Lara is a music teacher.
She can use a room on Wednesday afternoon for 3 hours.

The table shows the lessons that students want on Wednesday afternoon.

Student	Lesson	Length of lesson
Kate	Keyboard	20 minutes
Sue	Singing	$\frac{1}{2}$ hour
Tom	Keyboard	20 minutes
Gaby	Singing	45 minutes
Richard	Keyboard	20 minutes
Sam	Keyboard	45 minutes
Nina	Singing	$\frac{1}{2}$ hour

When one lesson ends the next lesson starts.

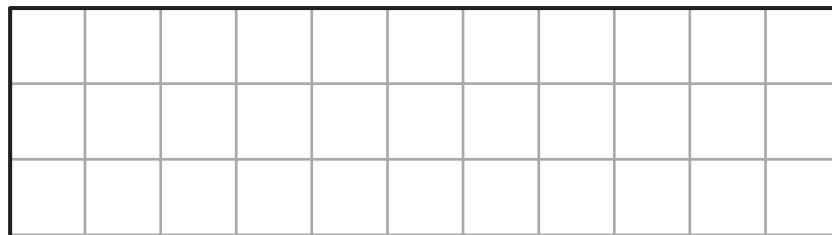
Can Lara teach all these lessons in 3 hours?

(Total for Question 9 is 4 marks)



10 The scale diagram shows part of the plan of a classroom.

bookshelves



Scale: 1 cm represents 50 cm

Mr Khan wants to put bookshelves along the complete length of the wall labelled “bookshelves”.

There are two sizes of bookshelves.

Large bookshelves are 150 cm wide.

Small bookshelves are 100 cm wide.

- (i) Work out how many large bookshelves and how many small bookshelves Mr Khan can put along the complete length of the wall.

..... large

..... small

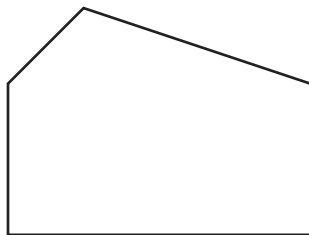
Both the large bookshelves and the small bookshelves are 50 cm from front to back.

- (ii) Draw these bookshelves on the scale drawing to show how they will fit.

(Total for Question 10 is 4 marks)



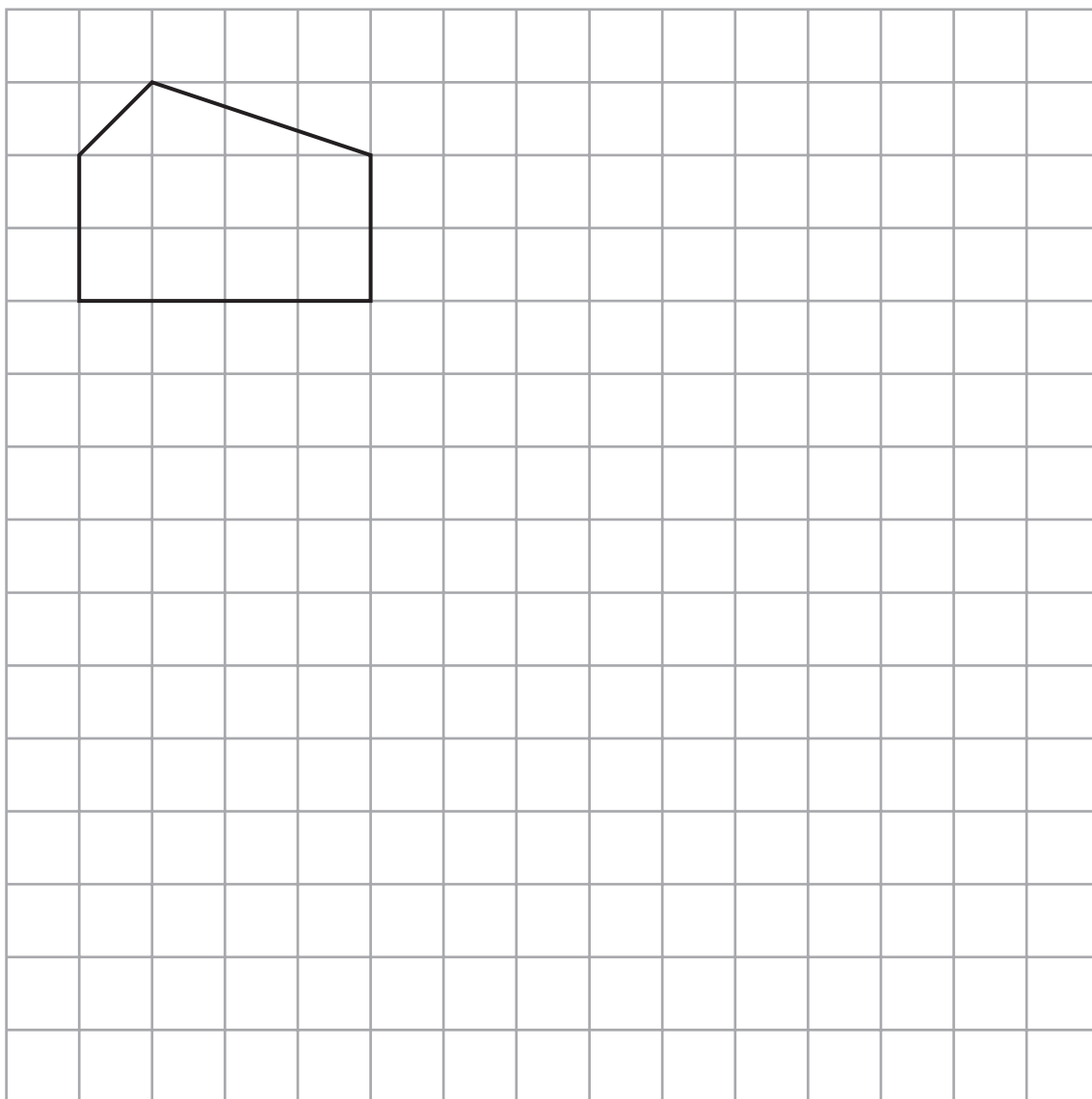
11 Here is a polygon with 5 sides.



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

.....
(1)

(b) On the grid, draw an enlargement of the polygon with scale factor 2



(2)

(Total for Question 11 is 3 marks)



12 (a) Solve $x - 5 = 13$

$$x = \dots\dots\dots$$

(1)

(b) Solve $2n + n + n = 10$

$$n = \dots\dots\dots$$

(1)

(c) Solve $\frac{p}{10} = 7$

$$p = \dots\dots\dots$$

(1)

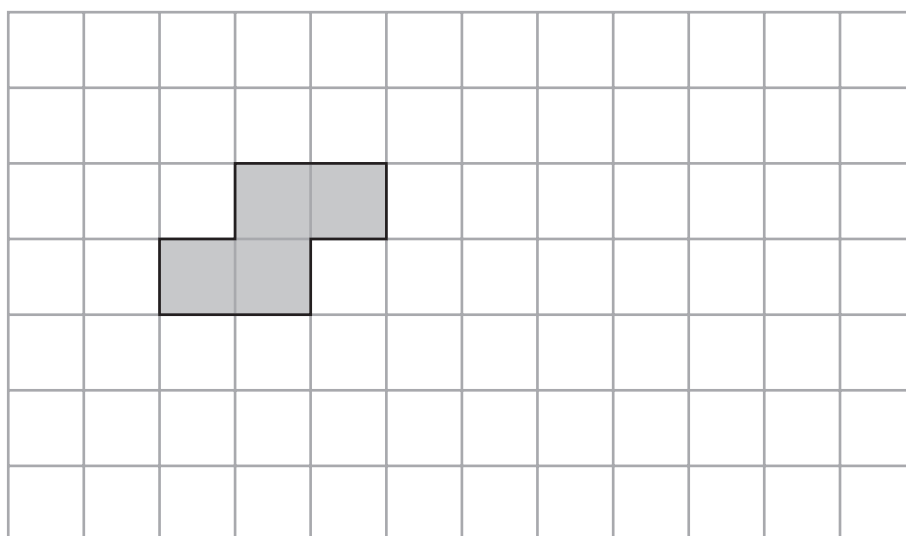
(d) Solve $5y + 6 = 18$

$$y = \dots\dots\dots$$

(2)

(Total for Question 12 is 5 marks)

13 On the grid, show how this shape will tessellate.
You should draw at least 8 more shapes.



(Total for Question 13 is 2 marks)



- *14** Faiza wants to buy some plants.
She finds out the price of the plants from 2 shops.

<p style="text-align: center;">Greenway</p> <p style="text-align: center;">Tray of 6 plants</p> <p style="text-align: center;">£2.95</p> <p style="text-align: center;">Buy one tray, get one tray free.</p>

<p style="text-align: center;">Petals</p> <p style="text-align: center;">Tray of 15 plants</p> <p style="text-align: center;">£3.90</p>

Faiza wants to buy exactly 60 plants.
She wants to buy the plants as cheaply as possible.

Which shop should Faiza buy the plants from?
You must show your working.

(Total for Question 14 is 4 marks)



- 15** Tom wants to buy a saxophone.
The saxophone costs £820

Tom pays £250 of the cost as a deposit.
He then pays the rest of the cost in 6 equal monthly payments.

Work out the amount of each monthly payment.

£.....

(Total for Question 15 is 3 marks)

- 16** Mia buys 3 kg of sweets for £11.40
She sells the sweets for 53p per 100 grams.

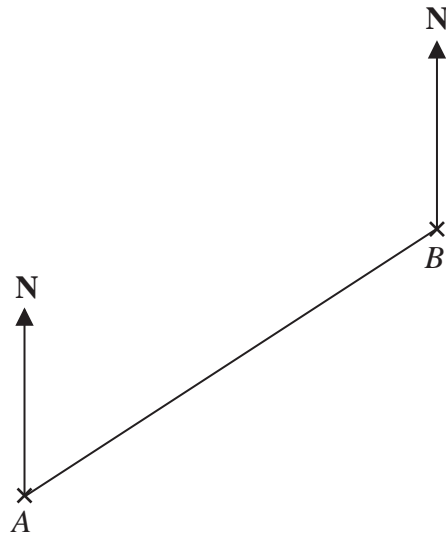
How much profit does Mia make per kilogram?

£.....

(Total for Question 16 is 4 marks)



17 The scale diagram shows the positions of two airports, A and B.



Scale: 1 cm represents 10 km

(a) Measure and write down the bearing of airport B from airport A.

.....^o
 (1)

(b) What is the real distance from airport A to airport B?

..... km
 (2)

(Total for Question 17 is 3 marks)



18 Here is a sketch of a triangle.

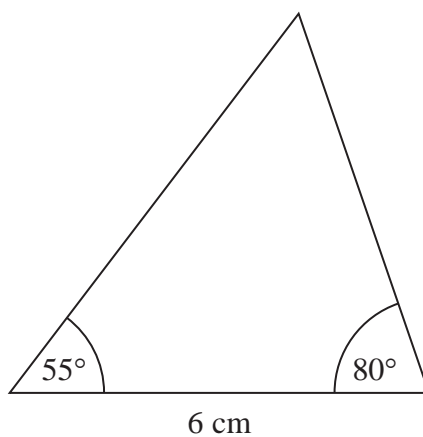


Diagram **NOT**
accurately drawn

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

(Total for Question 18 is 3 marks)



19 The equation $x^3 + 4x = 127$ has a solution between 4 and 5

Use a trial and improvement method to find this solution.

Give your answer correct to one decimal place.

You must show **all** your working.

.....
(Total for Question 19 is 4 marks)

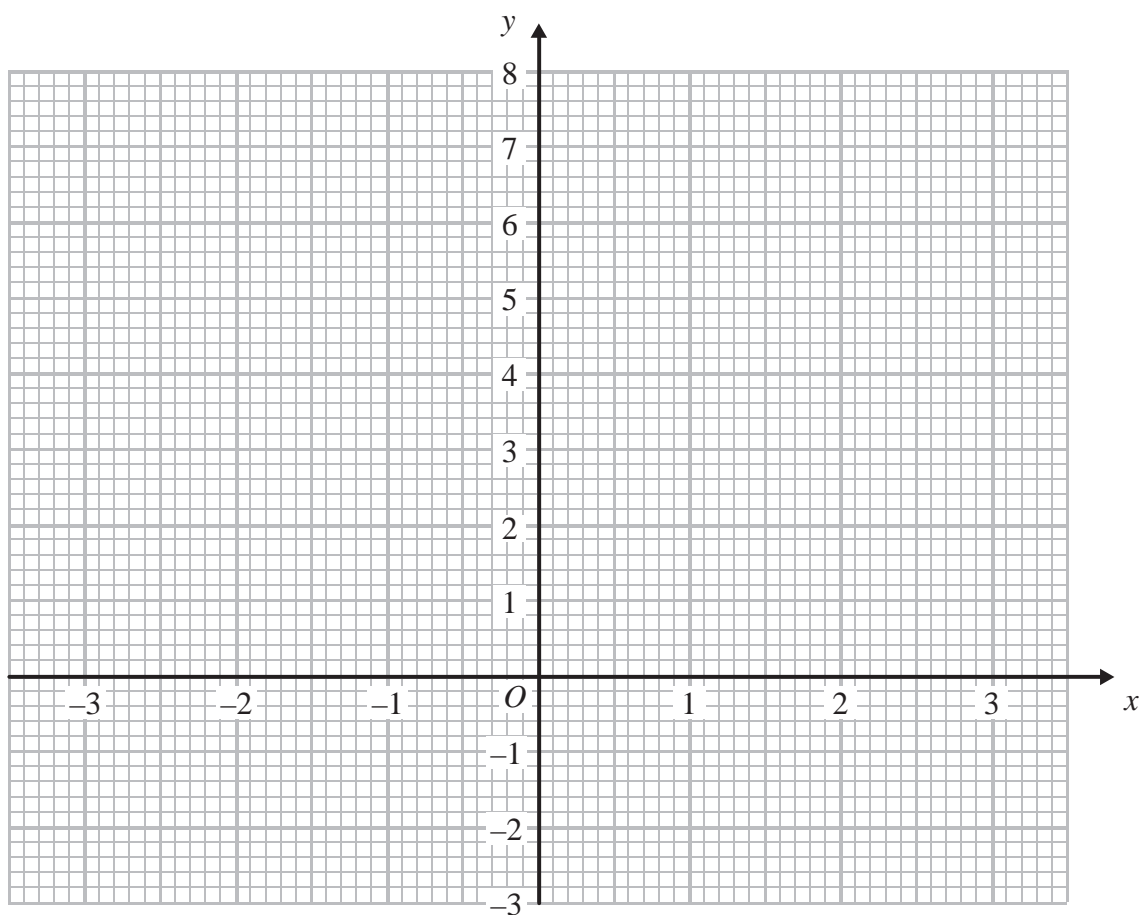


20 (a) Complete the table of values for $y = x^2 - 2$

x	-3	-2	-1	0	1	2	3
y		2	-1			2	7

(2)

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



(2)

(Total for Question 20 is 4 marks)



- 21** Jane invests £300 at a simple interest rate of 4.5% per year.
At the end of each year Jane gives the interest to a charity.

Work out the least number of years it will take for the total amount given to the charity to be greater than £50

.....
(Total for Question 21 is 3 marks)

- 22** Asha and Lucy are selling pencils in a school shop.
They sell boxes of pencils and single pencils.

Asha sells 7 boxes of pencils and 22 single pencils.

Lucy sells 5 boxes of pencils and 2 single pencils.

Asha sells twice as many pencils as Lucy.

Work out how many pencils there are in a box.

You must show all your working.

.....
(Total for Question 22 is 4 marks)



23

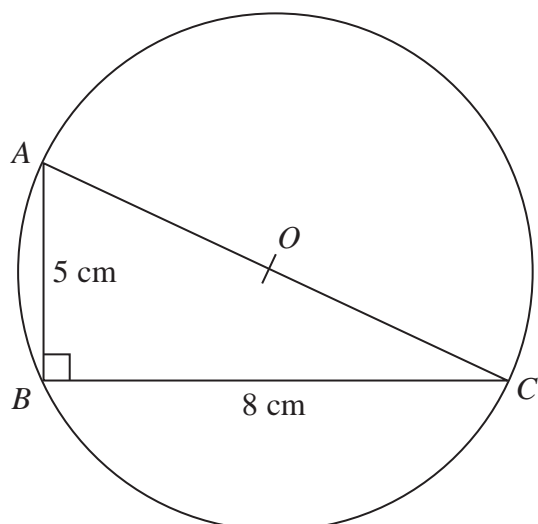


Diagram **NOT**
accurately drawn

ABC is a right-angled triangle.

A , B and C are points on the circumference of a circle centre O .

$AB = 5$ cm

$BC = 8$ cm

AOC is a diameter of the circle.

Calculate the circumference of the circle.

Give your answer correct to 3 significant figures.

..... cm

(Total for Question 23 is 4 marks)

TOTAL FOR PAPER IS 80 MARKS

