

Write your name here

Surname

Other names

**Pearson**  
**Edexcel GCSE**

Centre Number

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Candidate Number

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# Mathematics A

## Paper 2 (Calculator)

**Foundation Tier**

Friday 4 November 2016 – Morning

**Time: 1 hour 45 minutes**

Paper Reference

**1MA0/2F**

**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 100
- 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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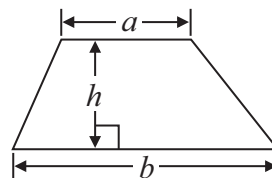
**PEARSON**

## GCSE Mathematics 1MA0

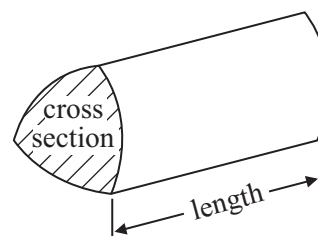
Formulae: Foundation Tier

**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 (a) Write the number **five thousand nine hundred and six** in figures.

.....  
(1)

- (b) Write the number 7162 to the nearest hundred.

.....  
(1)

- (c) Write the number 27.53 to the nearest whole number.

.....  
(1)

- (d) Write these numbers in order of size.

Start with the smallest number.

5.45

3.67

6.03

5.08

.....  
(1)

**(Total for Question 1 is 4 marks)**

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2 The table shows some information about five plants.

Name of plant	Height	Colour of flower	Planting time
foxglove	120 cm	white	October
lupin	100 cm	red	June
marigold	15 cm	yellow	February
poppy	25 cm	red	March
sunflower	180 cm	yellow	March

(a) Write down the colour of the foxglove's flower.

.....  
(1)

(b) Write down the name of the tallest plant.

.....  
(1)

A plant with a red flower has a planting time in March.

(c) Write down the name of this plant.

.....  
(1)

(Total for Question 2 is 3 marks)

3 There are 565 passengers on a train.  
143 of the passengers get off the train.  
109 passengers get on the train.

How many passengers are on the train now?

.....  
(Total for Question 3 is 2 marks)



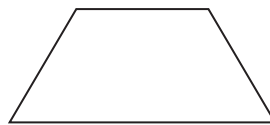
4 Here are seven shapes.



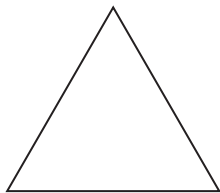
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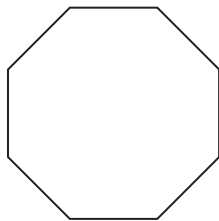
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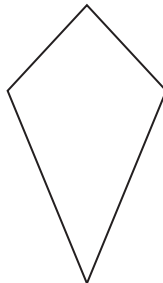
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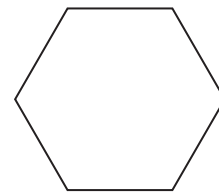
D



E



F



G

One of these shapes is a hexagon.

(a) Write down the letter of this shape.

.....  
(1)

One of these shapes has no lines of symmetry.

(b) Write down the letter of this shape.

.....  
(1)

(c) Write down the order of rotational symmetry of shape E.

.....  
(1)

**(Total for Question 4 is 3 marks)**



- 5 At 5 am the temperature was  $-5^{\circ}\text{C}$ .  
By midday, the temperature had risen by  $7^{\circ}\text{C}$ .

(a) Work out the temperature at midday.

.....  $^{\circ}\text{C}$   
(1)

At 5 pm the temperature was  $9^{\circ}\text{C}$ .

(b) Work out the difference between the temperature at 5 am and the temperature at 5 pm.

.....  $^{\circ}\text{C}$   
(1)

(Total for Question 5 is 2 marks)

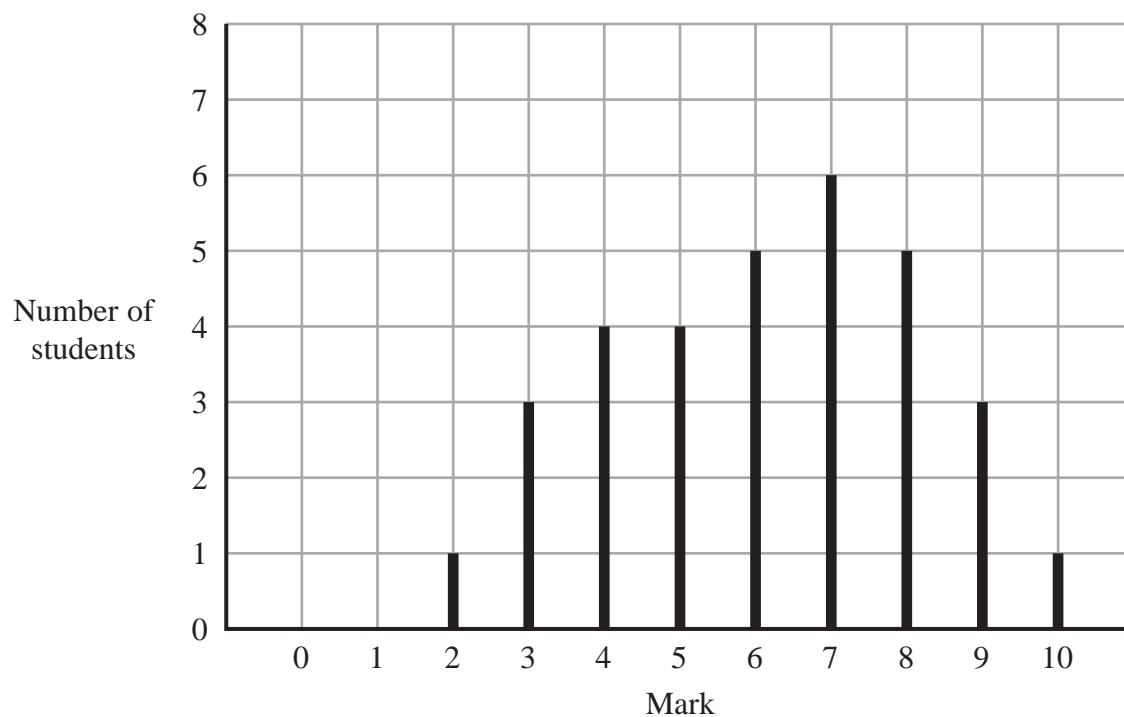
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- 6 The graph shows information about the test marks of Mr Gilbert's science class.



- (a) Work out the number of students who did the test.

.....  
(2)

- (b) Write down the mode.

.....  
(1)

- (c) Work out the range of the test marks.

.....  
(2)

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



- 7 Paula has £10 to spend on music downloads.  
Each music download costs 84p.

Paula buys as many music downloads as possible.

Work out how much money Paula has left.

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

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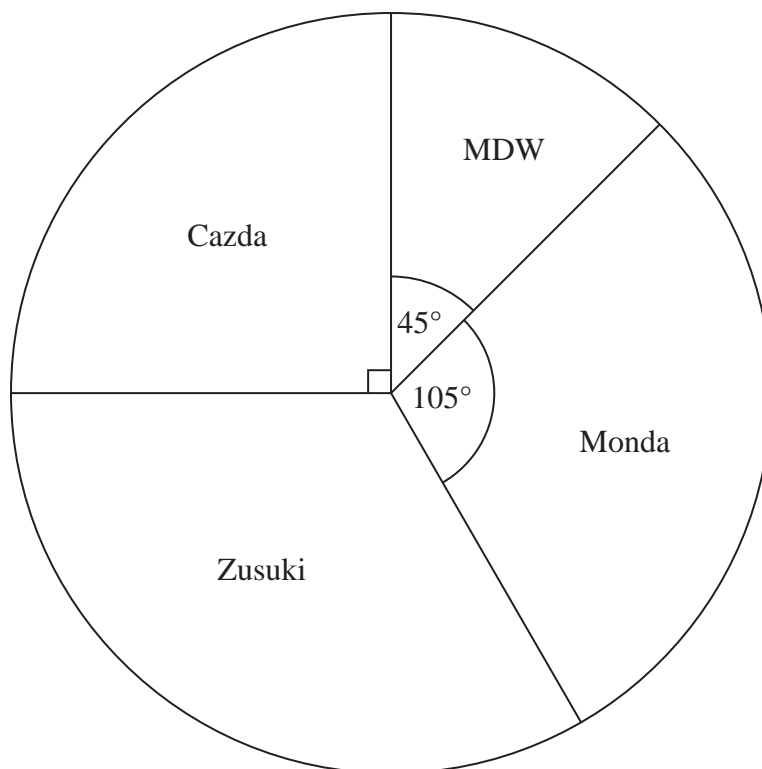
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8 Some drivers are asked which make of car they like best.

The pie chart and table show some information about their answers.



Complete the table.

Make of car	Number of drivers	Angle of sector
MDW	18	$45^\circ$
Cazda	.....	$90^\circ$
Zusuki	48	.....
Monda	.....	$105^\circ$

(Total for Question 8 is 4 marks)



9 (a) Solve  $3x = 18$

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

(b) Solve  $y + 7 = 15$

$$y = \dots\dots\dots (1)$$

(Total for Question 9 is 2 marks)

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- \*10** Jane wants to buy some compost.  
Both Suttons Shop and Greens Garden Shop sell compost.



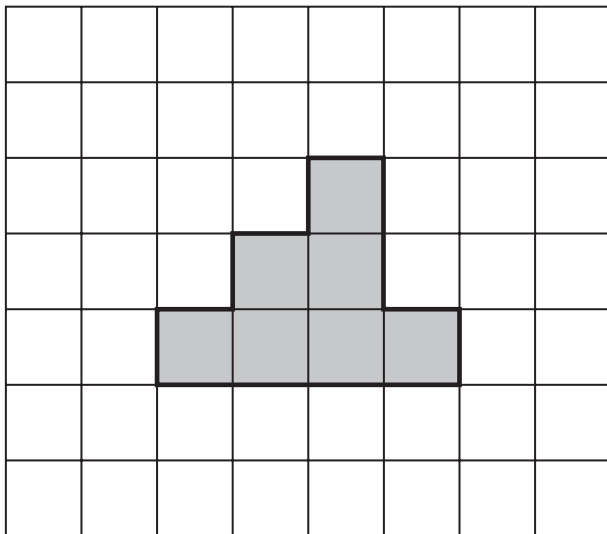
Jane needs 140 litres of compost.  
She wants to buy all the compost from the same shop.  
She wants to buy the compost as cheaply as possible.

Which shop should Jane buy the compost from?  
You must show all your working.

(Total for Question 10 is 4 marks)



11 Here is a shaded shape drawn on a centimetre grid.



(a) Work out the perimeter of this shape.

.....  
(2)

(b) What fraction of the grid is shaded?  
Give your answer in its simplest form.

.....  
(2)

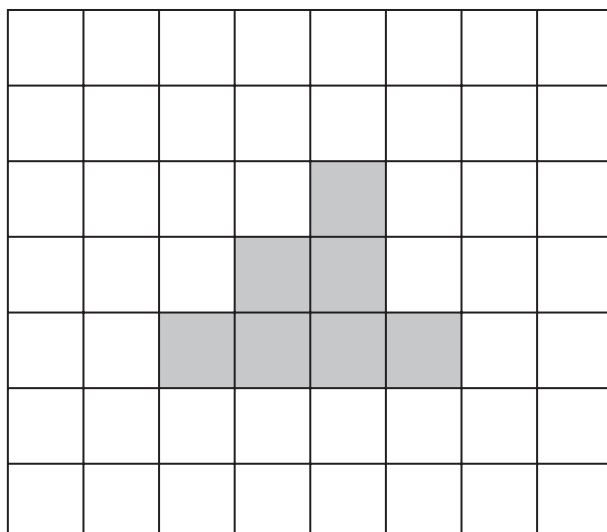
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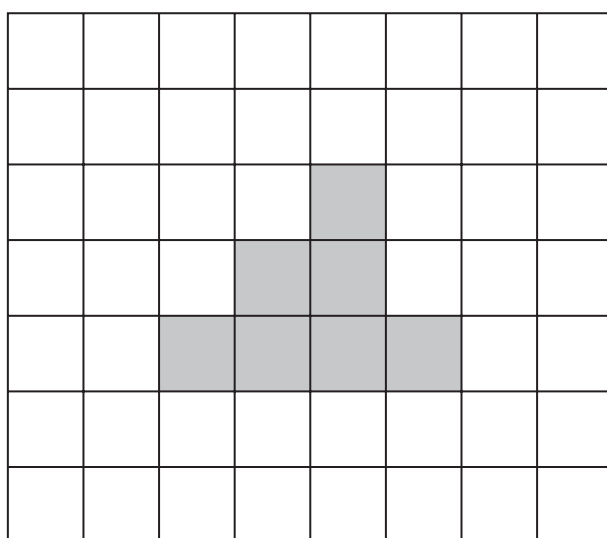


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- (c) On the grid above, shade in 3 more squares so that the completed shape has exactly one line of symmetry.

(1)



- (d) On this grid, shade in 3 more squares so that the completed shape has rotational symmetry of order 2

(1)

(Total for Question 11 is 6 marks)

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- 12** Breakfast cereal is put into packets.  
1 kg of the cereal is used to fill 20 packets.

(a) Work out the number of **grams** of cereal in each packet.

..... g  
(2)

Here are the weights of the ingredients needed to make 100 kg of the cereal.

oats	28 kg
wheat flakes	19 kg
barley flakes	15 kg
fruit	19 kg
nuts	8 kg
seeds	4 kg
other	7 kg

- (b) Work out the weight of oats needed to fill 5000 packets of the cereal.  
Give your answer in kg.

..... kg  
(3)

**(Total for Question 12 is 5 marks)**

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**13** Here is a list of numbers.

4      5      30      31      39      49      72      100

From the list, write down

(i) a multiple of 8

.....

(ii) a factor of 50

.....

(iii) a prime number

.....

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

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14 This rule is used to work out the cost of hiring a village hall.

Total cost = £8 for each hour plus a fixed charge of £5

Jackie hires the hall for 7 hours.

(a) Work out the total cost.

£.....  
(2)

James pays £29 to hire the hall.

(b) Work out how many hours James hires the hall for.

..... hours  
(3)

(Total for Question 14 is 5 marks)

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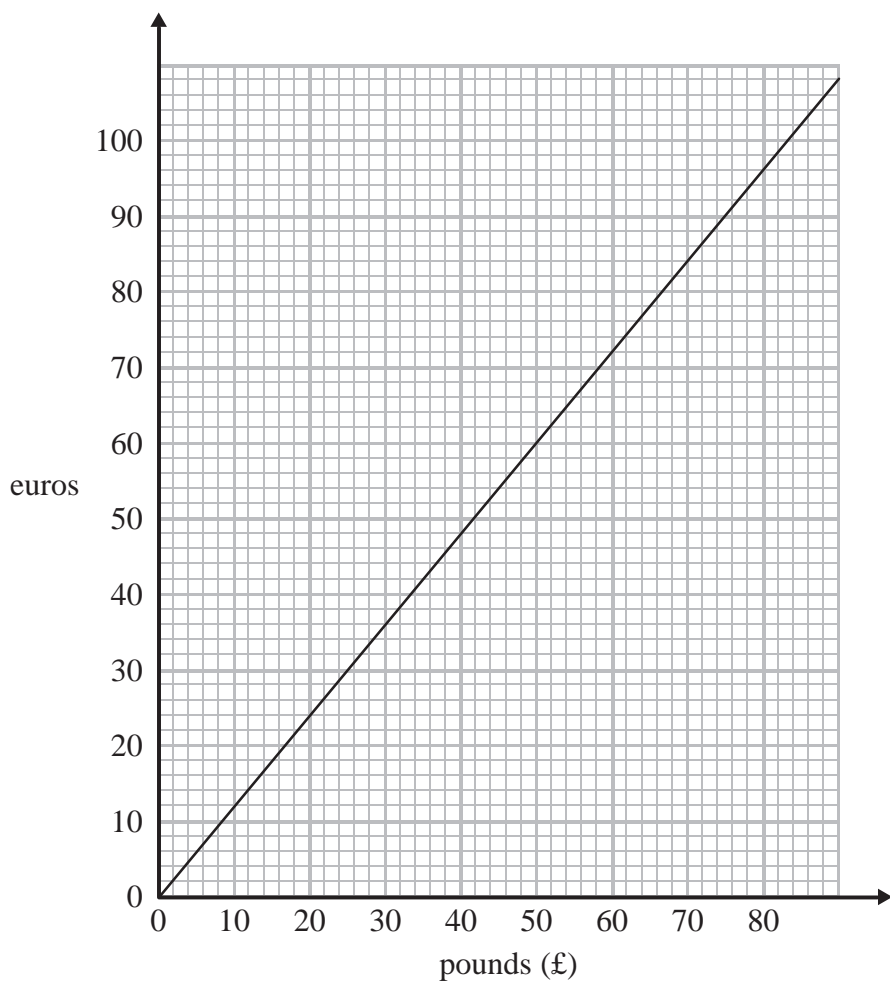


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15 You can use this conversion graph to change between pounds (£) and euros.



(a) Change £55 into euros.

..... euros  
(1)

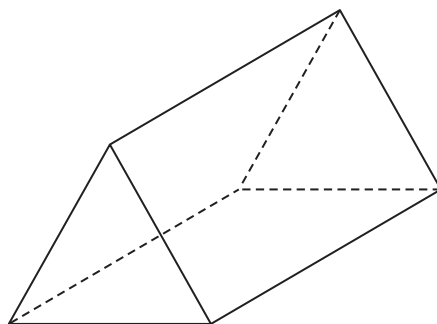
(b) Change 150 euros into pounds (£).

£.....  
(2)

(Total for Question 15 is 3 marks)



16 The diagram shows a prism.



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(a) Write down the number of vertices of the prism.

.....  
(1)

The cross section of the prism is an equilateral triangle.

(b) In the space below, draw a sketch of a net for this prism.

(2)



(c) In the space below, draw accurately an equilateral triangle of side 6.5 cm.

(2)

(Total for Question 16 is 5 marks)

- 17 (a) Work out  $\sqrt{44.89}$   
You must give your answer as a decimal.

.....  
(1)

- (b) Work out  $\frac{1}{2.5^3}$   
You must give your answer as a decimal.

.....  
(2)

(Total for Question 17 is 3 marks)

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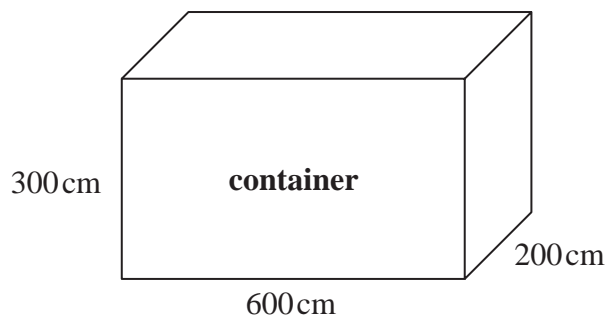
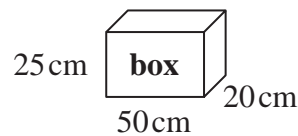


Diagram **NOT**  
accurately drawn



A company packs boxes into a container.

The container is a cuboid, 600 cm by 300 cm by 200 cm.

Each box is a cuboid, 50 cm by 25 cm by 20 cm.

Work out the largest number of boxes that can be packed into the container.

.....  
(Total for Question 18 is 3 marks)

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- 19 The table shows information about the numbers of Year 10 students absent from Ellen's school last week.

	Monday	Tuesday	Wednesday	Thursday	Friday
Number of students	12	6	7	10	13

- (a) Work out the mean number of Year 10 students absent each day.

.....  
(2)

Ellen's school has a total of 240 Year 10 students.

- (b) What percentage of Year 10 students were absent on Monday?

.....%  
(2)

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

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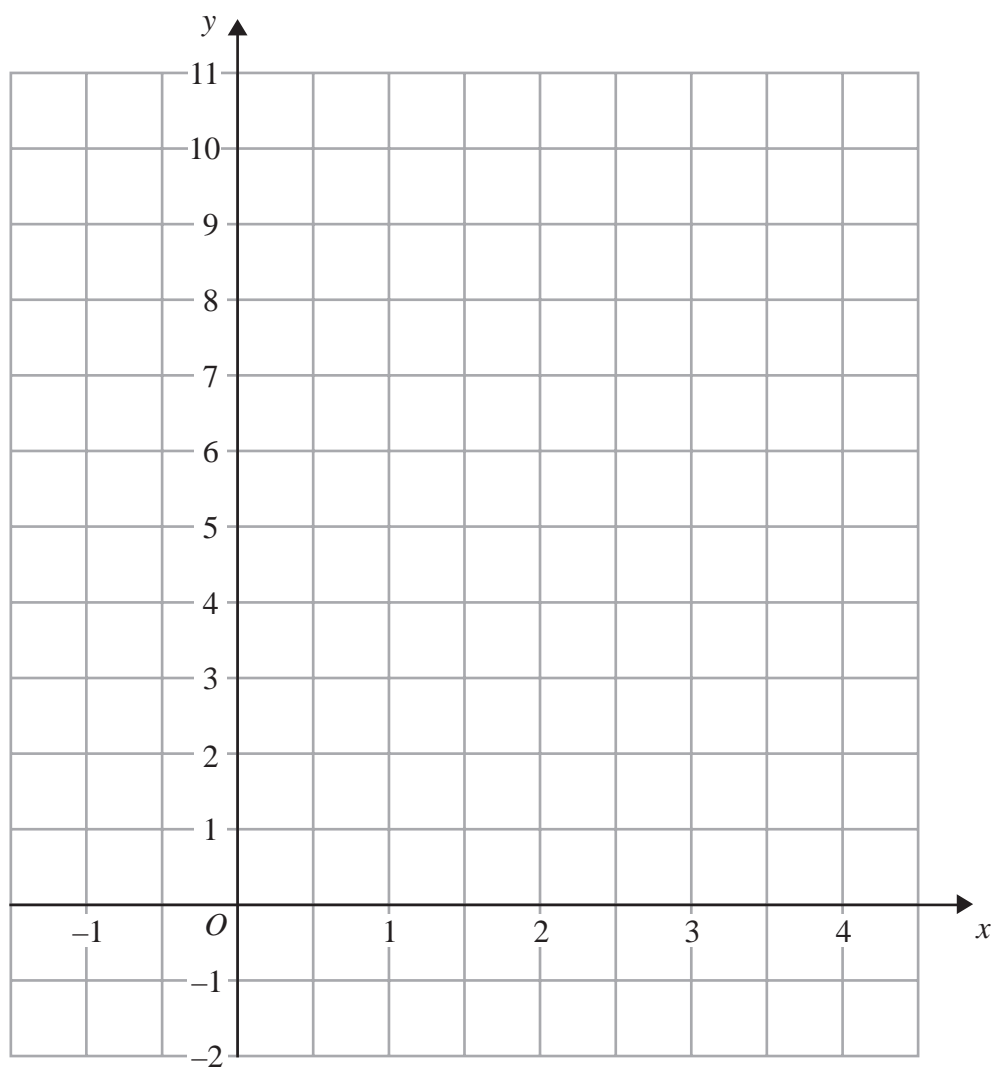


20 (a) Complete the table of values for  $y = 8 - 2x$

$x$	-1	0	1	2	3	4
$y$			6			0

(2)

(b) On the grid, draw the graph of  $y = 8 - 2x$  for values of  $x$  from -1 to 4



(2)

(Total for Question 20 is 4 marks)

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21 David drives to the supermarket on his way home from work.

The table shows some information about his journey.

	Time
Leaves work	17 30
Gets to supermarket	17 45
Leaves supermarket	18 10

(a) How many minutes is David at the supermarket?

..... minutes

(1)

David leaves the supermarket at 18 10  
He drives 20 miles to his home.  
The speed limit for the journey is 30 mph.

David drives within the speed limit.

\* (b) Can David get home before 19 00?  
Give reasons for your answer.

(3)

(Total for Question 21 is 4 marks)

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- 22** Pierre is going to carry out a survey using a questionnaire.  
He wants to find out how often people play sport.

Design a suitable question for Pierre to use on his questionnaire.

(Total for Question 22 is 2 marks)

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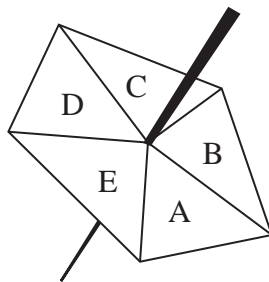
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23 Here is a five-sided spinner.



The table shows the probabilities that the spinner will land on A or on B or on C or on D.

<b>Letter</b>	A	B	C	D	E
<b>Probability</b>	0.25	0.10	0.20	0.15	

Kirsty spins the spinner once.

(a) Work out the probability that the spinner will land on E.

.....  
(2)

Chris is going to spin the spinner 60 times.

(b) Work out an estimate for the number of times the spinner will land on B.

.....  
(2)

(Total for Question 23 is 4 marks)



\*24 Blueberries are sold in small cartons and in large cartons.



small carton



large carton

There are 125 g of blueberries in a small carton.  
Each small carton costs £1.60

There are 225 g of blueberries in a large carton.  
Each large carton costs £2.80

Which size of carton is the better value for money?  
You must show your working.

(Total for Question 24 is 3 marks)

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25 (a) Simplify fully  $\frac{n^7 \times n^3}{n^6}$

.....  
(2)

(b) Factorise  $5y - 15$

.....  
(1)

(Total for Question 25 is 3 marks)



26 There are 165 counters in a bag.

Each counter is either black or white.

There are twice as many black counters as white counters in the bag.

Martine takes 40% of the black counters from the bag.

Work out the ratio of the number of black counters to the number of white counters now in the bag.

Give your ratio in its simplest form.

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(Total for Question 26 is 4 marks)

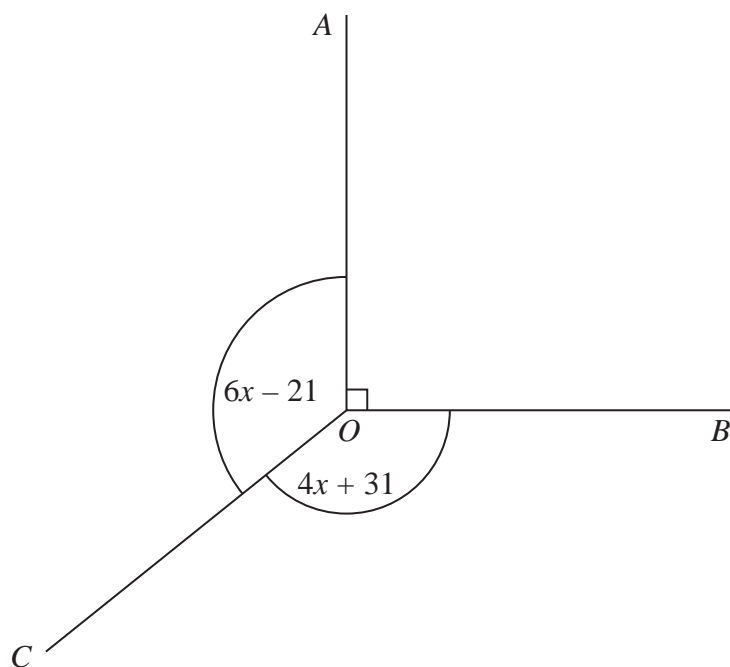


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Diagram **NOT**  
accurately drawn

In the diagram, all angles are in degrees.

Angle  $AOB$  is a right angle.

Angle  $AOC =$  Angle  $BOC$ .

Work out the value of  $x$ .

(Total for Question 27 is 3 marks)



P 4 8 1 9 5 A 0 2 9 3 2

28 The diagram shows a square  $ABCD$  inside a circle.

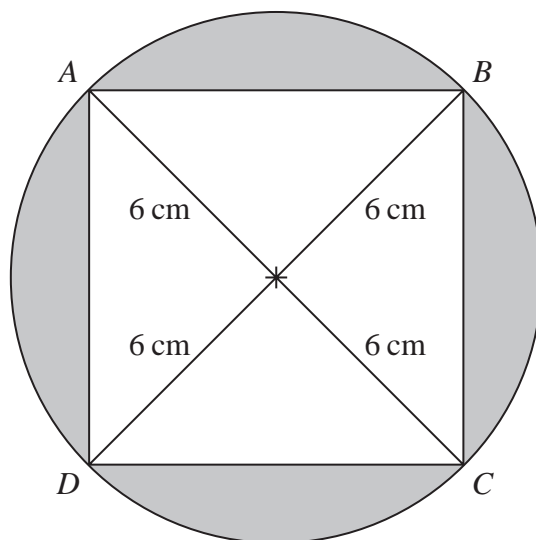


Diagram **NOT** accurately drawn

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The points  $A$ ,  $B$ ,  $C$  and  $D$  lie on the circle.

The radius of the circle is 6 cm.

Work out the total area of the shaded regions.

Give your answer correct to 3 significant figures.

.....  $\text{cm}^2$

(Total for Question 28 is 4 marks)

TOTAL FOR PAPER IS 100 MARKS



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