Write your name here

Surname		Other names

**Pearson
Edexcel GCSE**

Centre Number

Candidate Number

Mathematics A
Paper 1 (Non-Calculator)

Foundation Tier

Thursday 25 May 2017 – Morning	Paper Reference
Time: 1 hour 45 minutes	**1MA0/1F**

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 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.
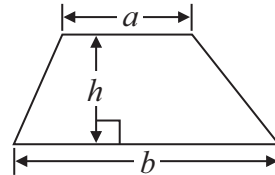
Turn over ▶
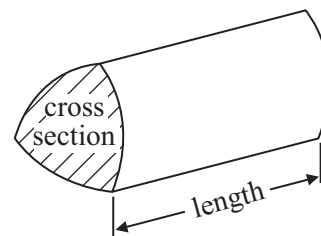
Pearson

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.

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

Volume of prism = area of cross section × length

P53439A0228

1   The pictogram gives information about the number of buns Sujata sold in her shop on each of four days last week.

Monday	◯ ◯
Tuesday	◯
Wednesday	◯ ◗
Thursday	◯ ◯ ◯
Friday	

Key:

◯ represents 4 buns

(a) Write down the number of buns Sujata sold on Monday.

....

(1)

(b) Work out the total number of buns sold on Monday, Tuesday, Wednesday and Thursday.

....

(2)

On Friday last week Sujata sold 16 buns.

(c) Show this information on the pictogram.

(1)

(Total for Question 1 is 4 marks)

P 5 3 4 3 9 A 0 3 2 8

2 (a) Work out $\frac{1}{4}$ of £20

£...

(1)

(b) Write 0.7 as a fraction.

....

(1)

(c) Write 3% as a decimal.

....

(1)

(d) Work out 20% of £80

£...

(2)

(Total for Question 2 is 5 marks)

3 Here are six shapes drawn on a centimetre grid.
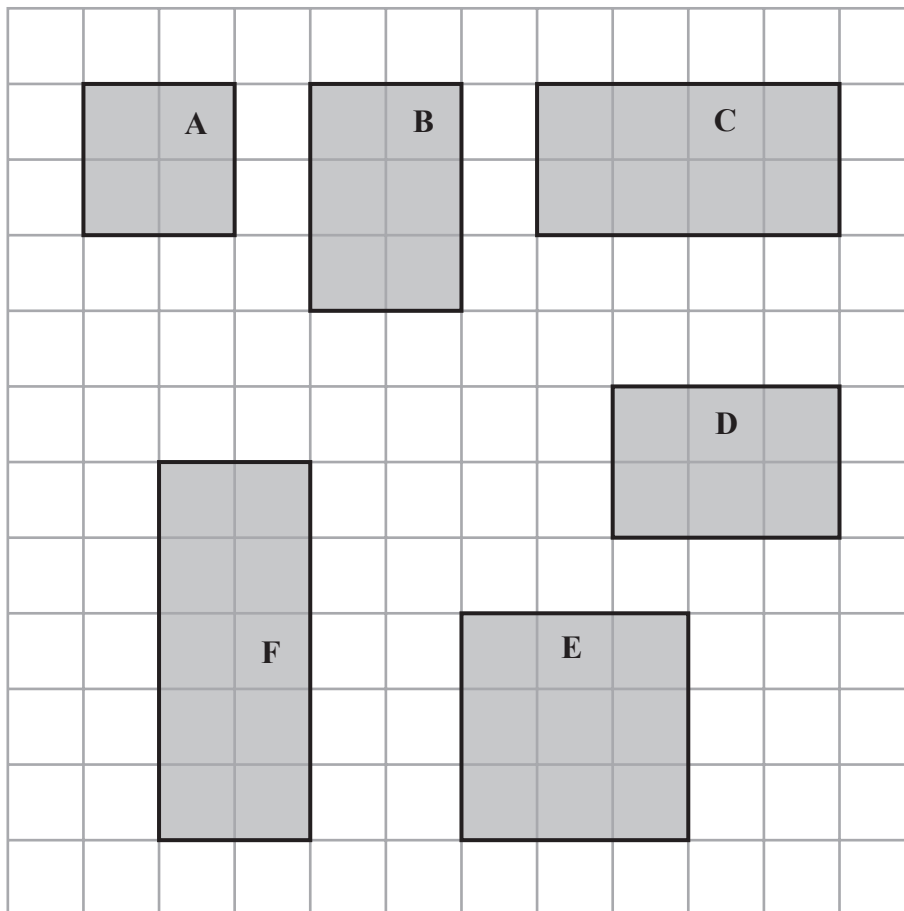
Two of the shapes are congruent.

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

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

One of the shapes is similar to shape **A**.

(b) Write down the letter of this shape.

....
(1)

(c) Find the area of shape **F**.

.... cm^2
(1)

(Total for Question 3 is 3 marks)

*4 Mr and Mrs Shankara and their 3 children go on a train journey.

Mr Shankara pays for 2 adult tickets and 3 child tickets.
The price of an adult ticket is £8.40
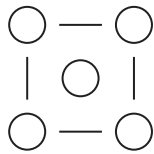The price of a child ticket is half the price of an adult ticket.

Mr Shankara pays for the tickets with 3 ten pound notes.

Work out how much change he should get.

(Total for Question 4 is 4 marks)

5 Here are the first three patterns in a sequence.
Each pattern is made from lines and circles.

| pattern | pattern | pattern |
| number 1 | number 2 | number 3 |

P53439A0628

(a) In the space below, complete pattern number 4

pattern
number 4

(1)

(b) Complete the table.

Pattern number	1	2	3	4	5
Number of lines	4	7	10		

(1)

(c) Find the number of **lines** in pattern number 12

....

(1)

(d) Find the number of **circles** in pattern number 20

....

(1)

(Total for Question 5 is 4 marks)

P53439A0728

6

Diagram **NOT**
accurately drawn

100° $x°$ $x°$

A   B   C
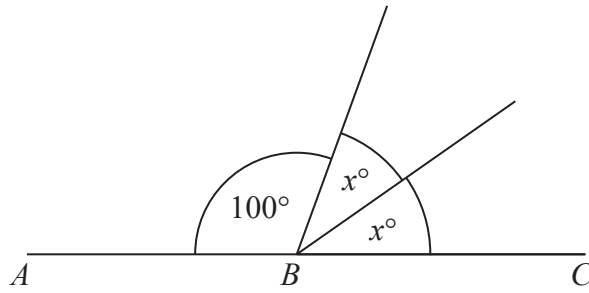
ABC is a straight line.

(a) Work out the value of *x*.

$x = $ ....

(2)

Here is a sketch of a triangle *PQR*.

R

6.5 cm

70°

P   7 cm   Q
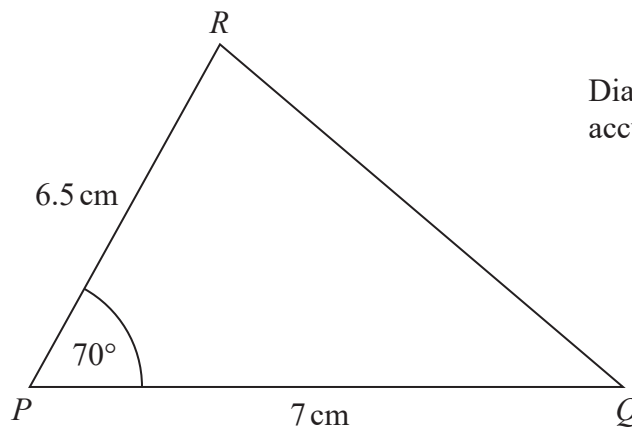
Diagram **NOT**
accurately drawn

(b) What type of angle is the angle *QPR*?

....

(1)

(c) In the space below, make an accurate drawing of triangle *PQR*.
   The line *PQ* has been drawn for you.

P ——————————————————— *Q*

(2)

(Total for Question 6 is 5 marks)

Turn over ▶

7 Here is Katya's fitness plan for one week.

On the first 4 days of the week, run 1500 metres each day.

On the last 3 days of the week, run 3 kilometres each day.

Katya uses her fitness plan for one week.

Work out the total distance she runs.

....

(Total for Question 7 is 3 marks)

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*8 Here are the instructions to work out the time, in minutes, needed to cook a chicken.

$$25 \text{ minutes for each } \frac{1}{2} \text{ kg}$$

then   add 15 minutes

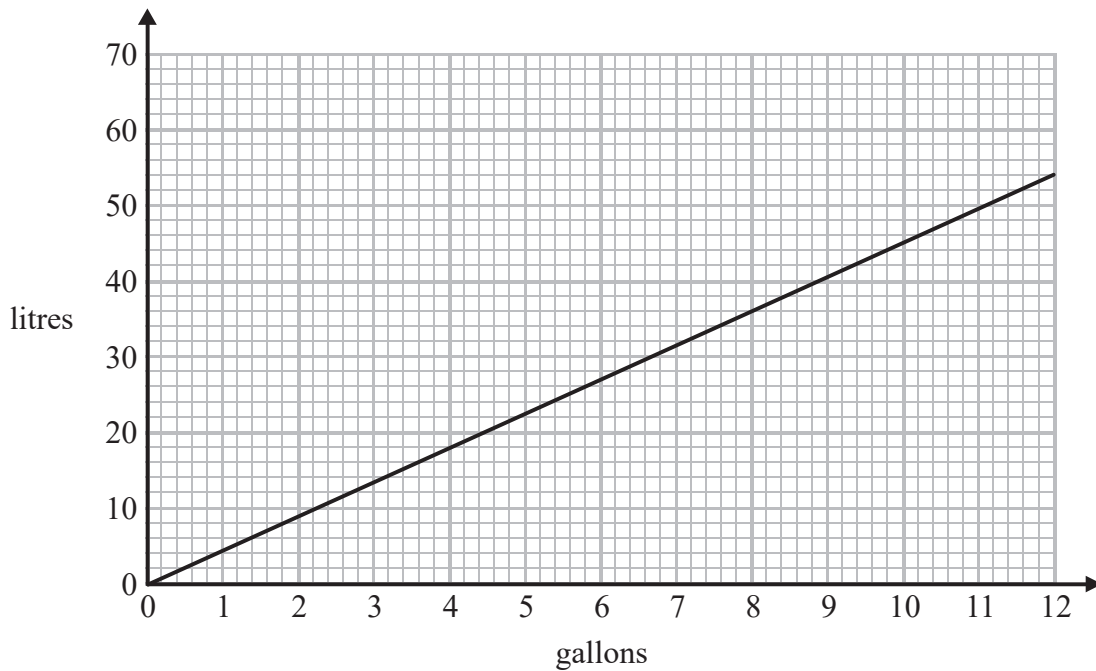Lawrence is going to cook a chicken.
The chicken has a weight of 2 kg.

Lawrence wants to finish cooking the chicken at 6 30 pm.

Work out the time he should start to cook the chicken.

(Total for Question 8 is 4 marks)

Turn over ▶

9 You can use this graph to change between gallons and litres.

(a) Change 36 litres to gallons.

.... gallons

(1)

The fuel tank of a bus holds 450 litres of fuel when completely full.

The fuel tank is empty.

Kerrie puts 90 gallons of fuel in the fuel tank.

*(b) Is the fuel tank completely full?
    You must show how you get your answer.

(3)

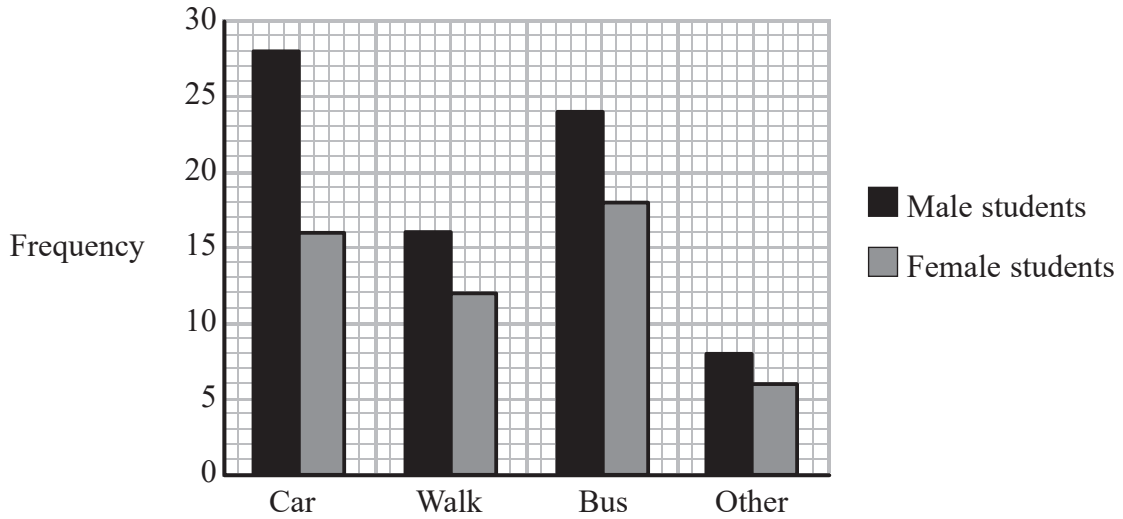**(Total for Question 9 is 4 marks)**

10 The bar chart gives information about how students got to a college yesterday.

(a) How many male students got to the college by car?

....
(1)

(b) Work out the total number of students who got to the college by bus.

....
(1)

More male students than female students got to the college.

(c) How many more?

....
(2)

(Total for Question 10 is 4 marks)

11 The table shows the temperatures in some cities at midnight one night.

City	Temperature at midnight
Cardiff	+4 °C
Leeds	−2 °C
London	+3 °C
Newcastle	−4 °C
Truro	+4 °C

(a) Which city has the lowest temperature at midnight?

....

(1)

(b) Work out the difference between the temperatures at midnight in Leeds and in Truro.

.... ° C

(1)

Between midnight and noon the next day the temperature in London fell by 7 °C.

(c) Work out the temperature at noon the next day in London.

.... ° C

(1)

(d) Work out the mean of the five temperatures in the table.

.... ° C

(2)

(Total for Question 11 is 5 marks)

12 Here is an equilateral triangle.
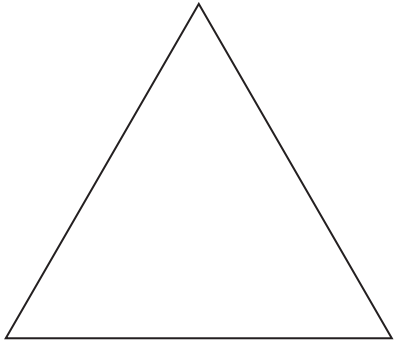
(a) On the triangle, draw all the lines of symmetry.
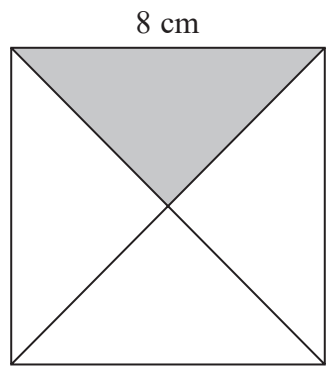
(2)

The diagram shows a square and its diagonals.

8 cm

Diagram **NOT**
accurately drawn

The square has sides of length 8 cm.

(b) Work out the area of the shaded triangle.

....cm²

(3)

(Total for Question 12 is 5 marks)

13 $y = 4x - 3t$

$x = 2$
$t = 5$

(a) Work out the value of y.

$y =$ ....
(2)

$y = 4x - 3t$

$y = 30$
$t = 2$

(b) Work out the value of x.

$x =$ ....
(2)

(Total for Question 13 is 4 marks)

14 Matthew has a job.
His normal hourly rate of pay is £10

His overtime hourly rate of pay is $1\frac{1}{2}$ times his normal hourly rate of pay.

Matthew is paid at the normal hourly rate for 7 hours work each day, Monday to Friday.
He does **not** work on Saturday or Sunday.

Here is a table showing the number of hours of overtime he worked each day this week.

	Mon	**Tues**	**Wed**	**Thur**	**Fri**
Overtime (hours)	3	2	0	1	3

Work out Matthew's total pay for this week.

£.......................................
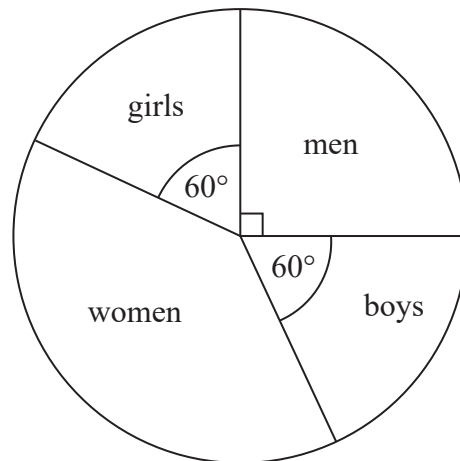
(Total for Question 14 is 5 marks)

15

Diagram **NOT** accurately drawn

The pie chart above gives information about the people who went to a shop last week.

(a) What fraction of the people were girls?
Give your answer in its simplest form.

....

(2)

30 boys went to the shop.

(b) Work out the number of women who went to the shop.

....

(3)

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The pie chart below gives information about the people who went to the same shop this week.

Diagram **NOT** accurately drawn
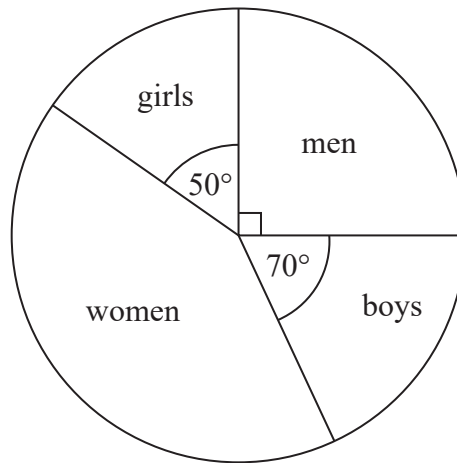
Laurent says,

"The pie chart shows that more boys went to the shop this week than last week."

(c) Is Laurent correct?
Explain your answer.

....

....

(1)

(Total for Question 15 is 6 marks)

16 (a) Simplify $4x + 3x$

....
(1)

(b) Simplify $2 \times 3y$

....
(1)

(c) Simplify $5e + 4e^2 + 3e - 6e^2$

....
(2)

(Total for Question 16 is 4 marks)

*17 *ABC* is an isosceles triangle.
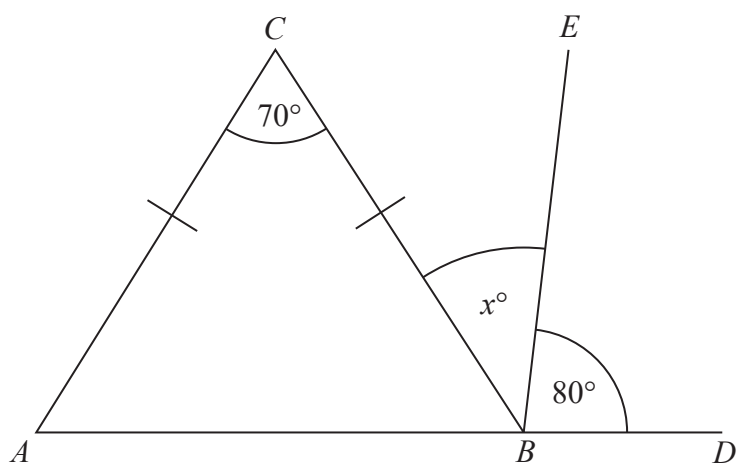
Diagram **NOT** accurately drawn

AC = *BC*
ABD is a straight line.

Angle *ACB* = 70°
Angle *EBD* = 80°

Angle *CBE* = *x*°

Work out the value of *x*.
Give reasons for your answer.

(Total for Question 17 is 4 marks)

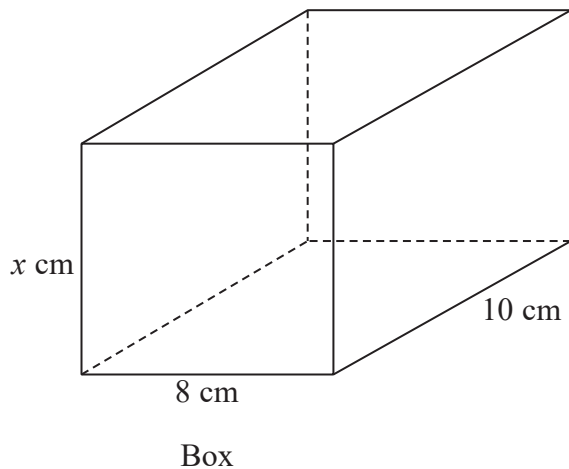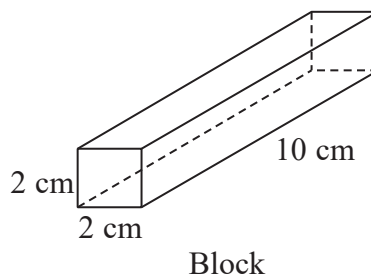**18** Josef puts wooden blocks into boxes.

Diagram **NOT** accurately drawn

Box

Block

Each box is a cuboid x cm by 8 cm by 10 cm.
Each block is a cuboid 2 cm by 2 cm by 10 cm.

24 blocks completely fill a box.

Work out the value of x.

$x =$ ....

(Total for Question 18 is 4 marks)

*19 Bill buys and sells laptops.

Last month Bill bought 50 laptops.
He paid £400 for each laptop.

He sold
   40 of these laptops at a profit of 30% on each laptop
   10 of these laptops at a profit of 15% on each laptop

Bill's target last month was to sell all 50 laptops for a total of at least £25 000
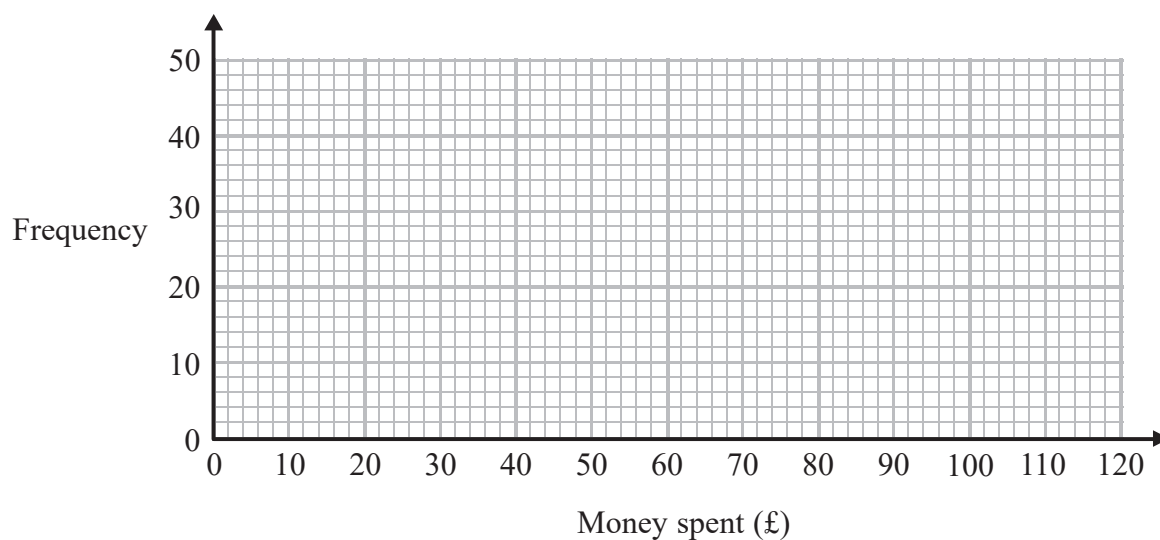
Did Bill reach this target?

(Total for Question 19 is 5 marks)

Turn over ▶

20 The table gives information about the money, £A, some people spent on an internet site one day.

Money spent (£A)	Frequency
$0 < A \leqslant 20$	10
$20 < A \leqslant 40$	15
$40 < A \leqslant 60$	25
$60 < A \leqslant 80$	40
$80 < A \leqslant 100$	6

(a) On the grid, draw a frequency polygon for this information.

Money spent (£)

(2)

(b) Write down the modal class interval.

....

(1)

(Total for Question 20 is 3 marks)

21 Solve $4(x + 3) = 2x + 8$

$x =$ ....

(Total for Question 21 is 3 marks)

22 Babajan makes breakfast cereal.
She mixes nuts, raisins and oats in the ratio 3 : 2 : 5 by weight.

On Monday, Babajan uses 60 grams of nuts.

(a) Work out the weight of raisins and the weight of oats she uses to make the breakfast cereal.

raisins .... grams

oats .... grams

(3)

On Tuesday, Babajan makes 300 grams of the breakfast cereal.

500 grams of nuts cost £8

(b) Work out the cost of the nuts used to make 300 grams of the breakfast cereal.

£ ....

(3)

(Total for Question 22 is 6 marks)

23 Frances grows plants in a container.
Each of the 5 faces of the container is made of glass.

Diagram **NOT**
accurately drawn

40 cm

50 cm

80 cm
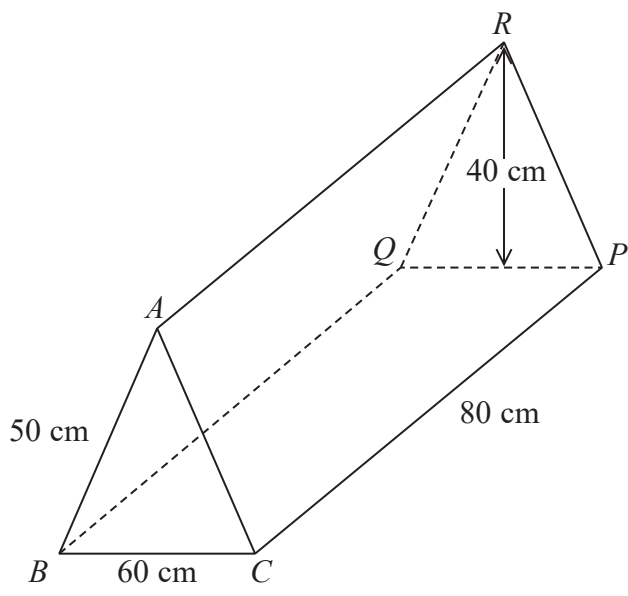
60 cm

The container is in the shape of a prism.
The cross section of the prism is an isosceles triangle with height 40 cm.

$BC = 60$ cm
$AB = AC = 50$ cm
$CP = 80$ cm

Work out the total area of glass needed to make the container.

....cm^2

(Total for Question 23 is 3 marks)

24 There are 5 girls, 6 boys and some adults in a room.
Jenny selects at random one of these people.

The probability that Jenny selects a girl is $\dfrac{1}{3}$

Work out the probability that Jenny selects an adult.

....

(Total for Question 24 is 3 marks)

TOTAL FOR PAPER IS 100 MARKS