Write your name here

Surname		Other names

In the style of:
Edexcel GCSE

Centre Number

Candidate Number

Mathematics A
Example Booklet
Model Answers

Higher Tier

Past Paper Style Questions
Arranged by Topic

Paper Reference
1MA0/1H

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.
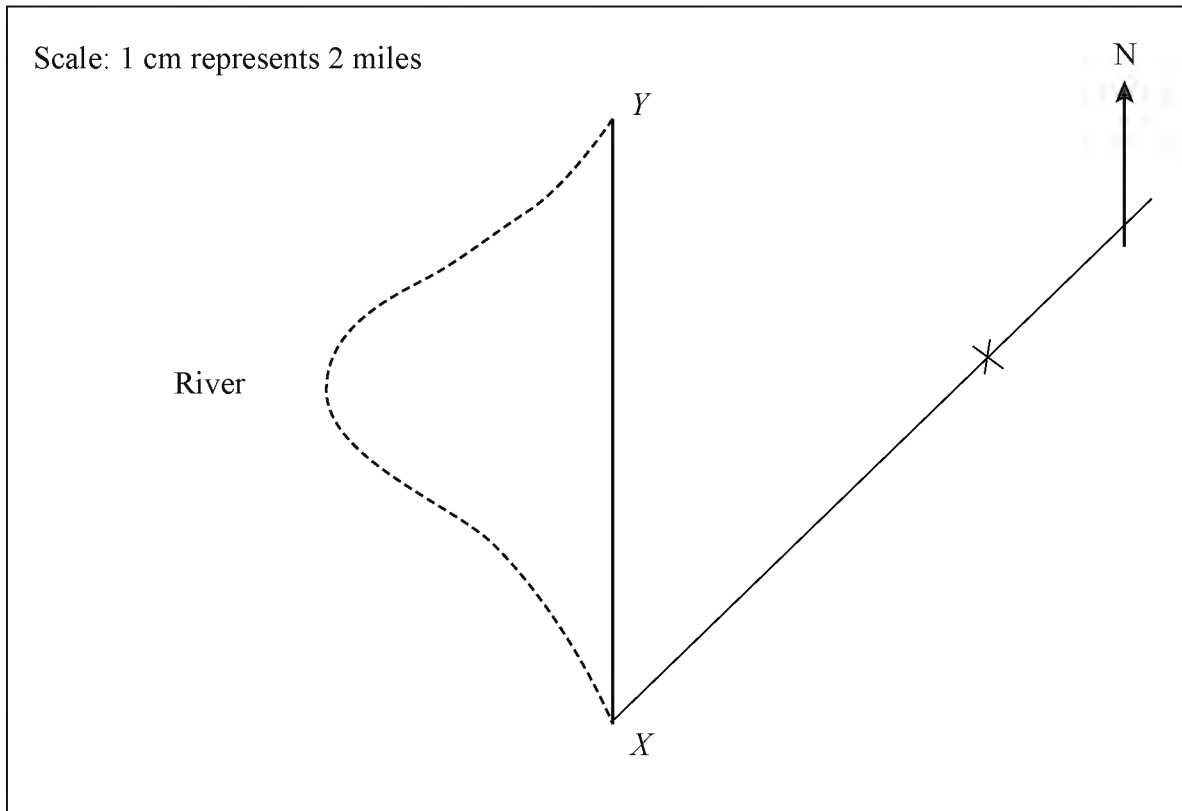
Advice

- 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 ▶

4.   An helicopter flies due North from *X* to *Y*.
          The distance from *X* to *Y* on the river is 24 miles.

Scale: 1 cm represents 2 miles

N

Y

River

X

X

4 (a)   How much further is it from *X* to *Y* on the river than by helicopter?

XY = 8.1 cm
8.1 × 2 = 16.2 miles
24 − 16.2 = 7.8

......7.8.......... miles

(3)

(b)   *Z* is 12 miles north-east of *X*.

(i)   Mark with a cross the point *Z* on the diagram.   **(2)**

(ii)   Write down the three-figure bearing of *Z* from *X*.   ......045......... °
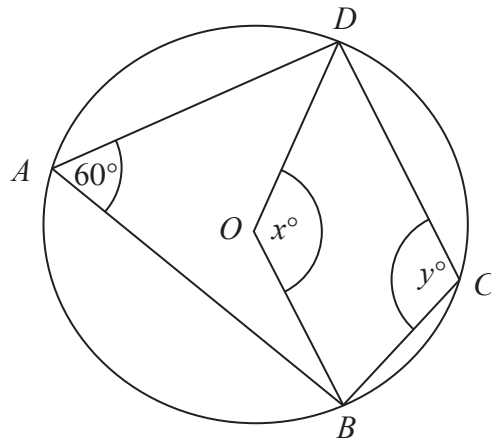
(1)

(Total 6 marks)

6.

Diagram **NOT** accurately drawn

In the diagram, A, B, C and D are points on the circumference of a circle, centre O.
Angle $BAD = 60°$.
Angle $BOD = x°$.
Angle $BCD = y°$.

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

$x = $ ...120...........................

(ii) Give a reason for your answer.

...The angle subtended at the centre of a circle is twice the angle............

...subtended at the circumference..

(2)

(b) (i) Work out the value of y.

$y = $ ....120...........................

(ii) Give a reason for your answer.

...The opposite angles in a cyclic quadrilateral add up to $180°$...................

....

(2)

(Total 4 marks)

5. The table shows a summary of the marks scored by 120 people in a test.

Mark	Frequency
$0 < \text{mark} \leqslant 20$	8
$20 < \text{mark} \leqslant 40$	12
$40 < \text{mark} \leqslant 60$	46
$60 < \text{mark} \leqslant 80$	35
$80 < \text{mark} \leqslant 100$	19

(a) Three-quarters of the people pass the test.

Use a cumulative frequency graph to estimate the pass mark.
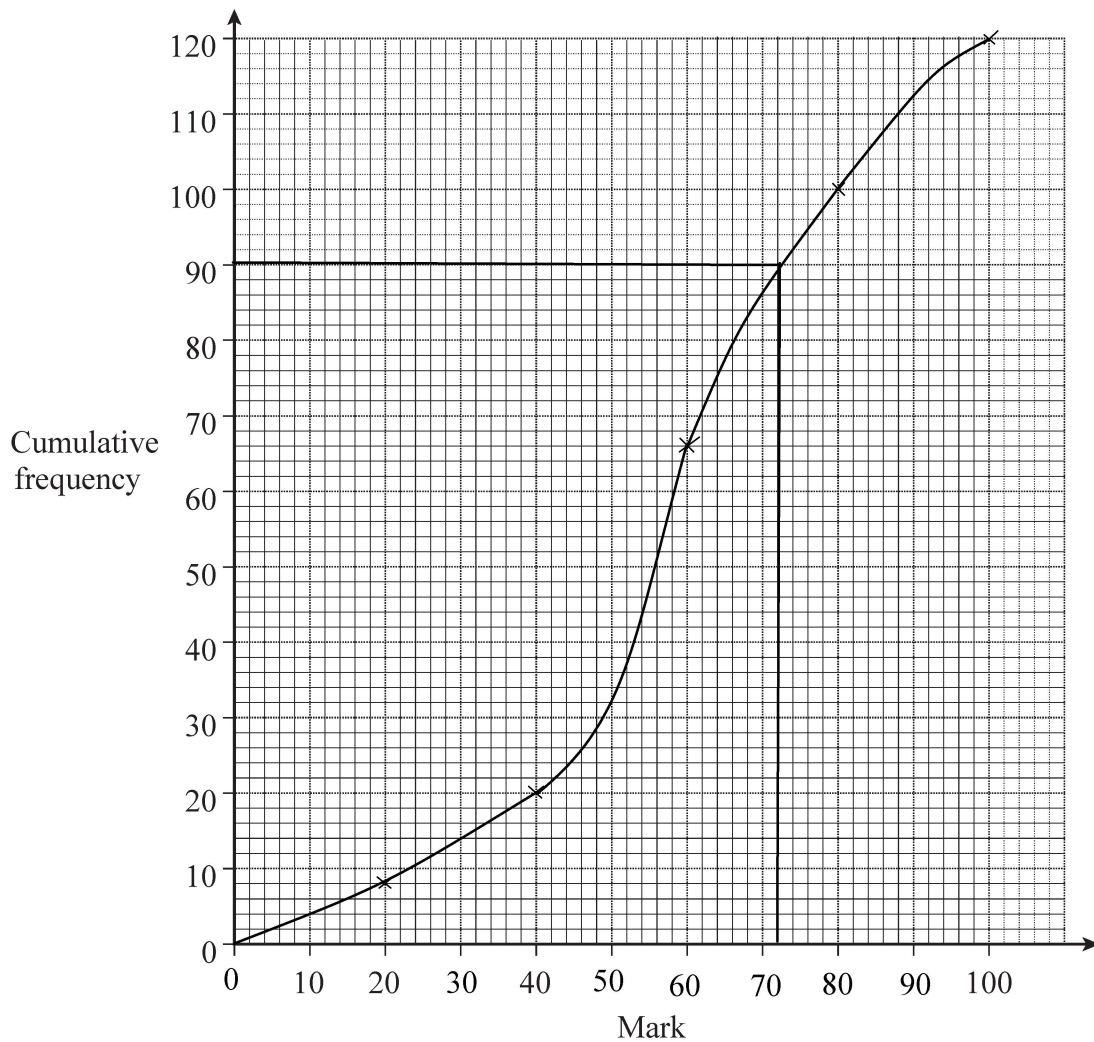
............72................

(5)

9. A concert ticket costs £65 plus a booking charge of 15%.

Work out the total cost of a concert ticket.

Method 1

$$65 \times \frac{15}{100} = 9.75$$

$$65 + 9.75 = 74.75$$

Method 2

$$65 \times 1.15 = 74.75$$

Method 3

Using a simple calculator key in:

$$65 + 15\% = 74.75$$

£ ...74.75...................

(Total 3 marks)

10. A school canteen sells salads and hot meals.

In one week the number of salads sold and the number of hot meals sold were in the ratio 3 : 5

The total number of salads and hot meals sold in the week was 1456

Work out the number of salads sold.

3 : 5

$$3 + 5 = 8$$

There are 8 shares

$$1465 \div 8 = 182$$
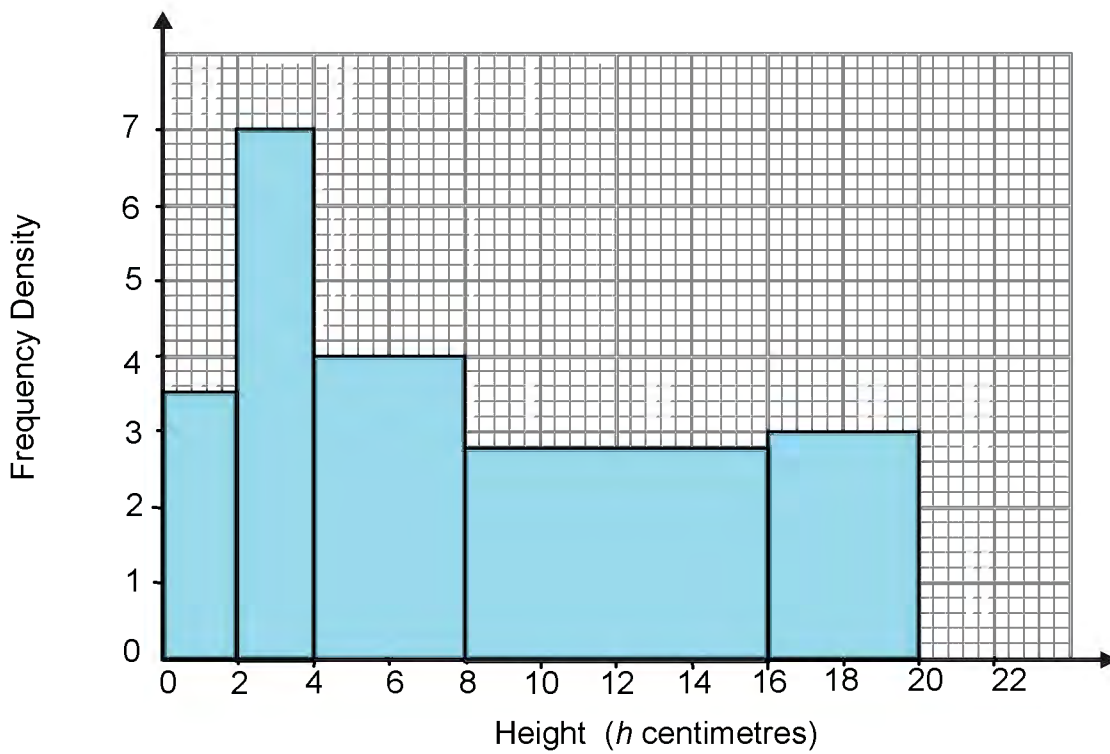
Each share is 182

$$3 \times 182 = 546$$

...........546.............

(Total 2 marks)

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2. The table gives information about the heights, *h* centimetres, of plants in a greenhouse.

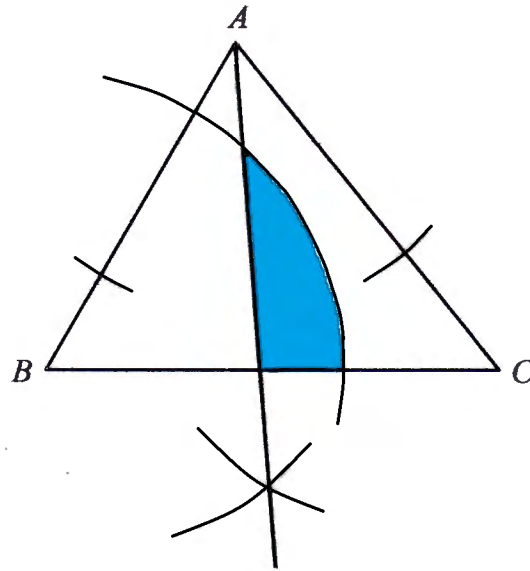| Height (*h* centimetres)	Frequency	F.D
$0 < h \leqslant 2$	7	3.5
$2 < h \leqslant 4$	14	7
$4 < h \leqslant 8$	16	4
$8 < h \leqslant 16$	22	2.75
$16 < h \leqslant 20$	12	3

Draw a histogram to show this information.

(Total 3 marks)

4.

ABC is a triangle.

Shade the region inside the triangle which is **both**

       less than 4 centimetres from the point *B*
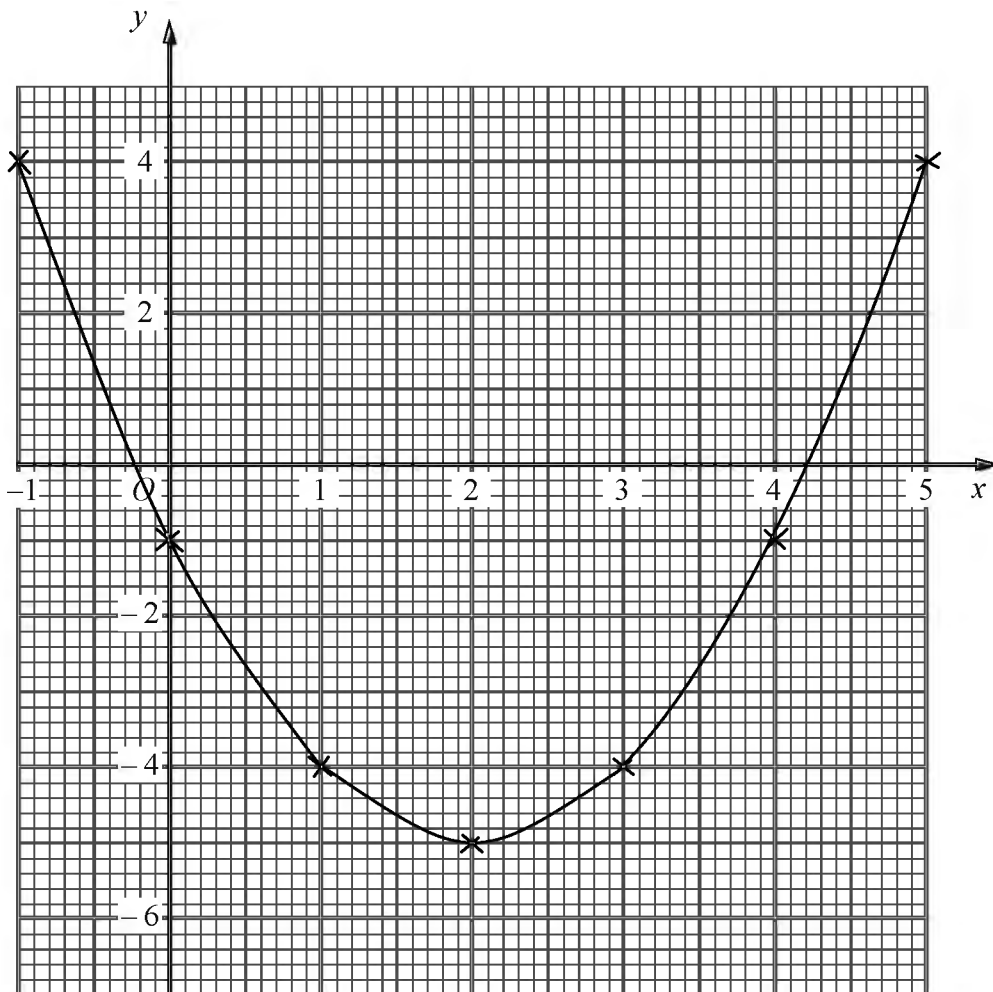
and   closer to the line *AC* than the line *AB*.

(Total 4 marks)

5. (a) Complete the table of values for $y = x^2 - 4x - 1$

x	−1	0	1	2	3	4	5
y	4	−1	−4	-5	-4	−1	4

(2)

(b) On the grid, draw the graph of $y = x^2 - 4x - 1$

(2)

(c) Use your graph to estimate the values of x when $y = -3$

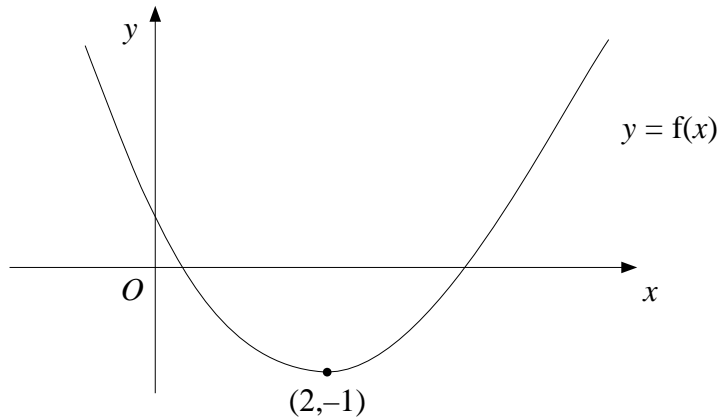$x = $ ......0.6.........................

$x = $ ......3.4.........................

(2)

(Total 6 marks)

1.

$y = \text{f}(x)$

$(2,-1)$

The diagram shows part of the curve with equation $y = \text{f}(x)$

The minimum point of the curve is at $(2,-1)$

(a) Write down the coordinates of the minimum point of the curve with equation

    (i) $y = \text{f}(x - 2)$
        Graph moves right 2   ....(4, -1)....................

    (ii) $y = 2\text{f}(x)$
        Stretch *y* by 2   ....(2, -2)....................

    (iii) $y = \text{f}(2x)$ ....(1, -1)....................
        Shrink *x* by 2   **(3)**

The curve $y = \text{f}(x)$ is reflected in the *y* axis.

(b) Find the equation of the curve following this transformation.

        See summary of rules below question 2

                                  $y = $ .....f(-x).....................
                                                (1)

The curve with equation $y = \text{f}(x)$ has been transformed to give the curve with equation $y = \text{f}(x) + 2$

(c) Describe the transformation.

    .....Translation by 2 units parallel to the *y* axis. (Graph moves up 2)...............
                                                      (1)

                                        (Total 5 marks)