Question 1 (3 Marks)

The graph of $y = f(x)$ is drawn on the grid.
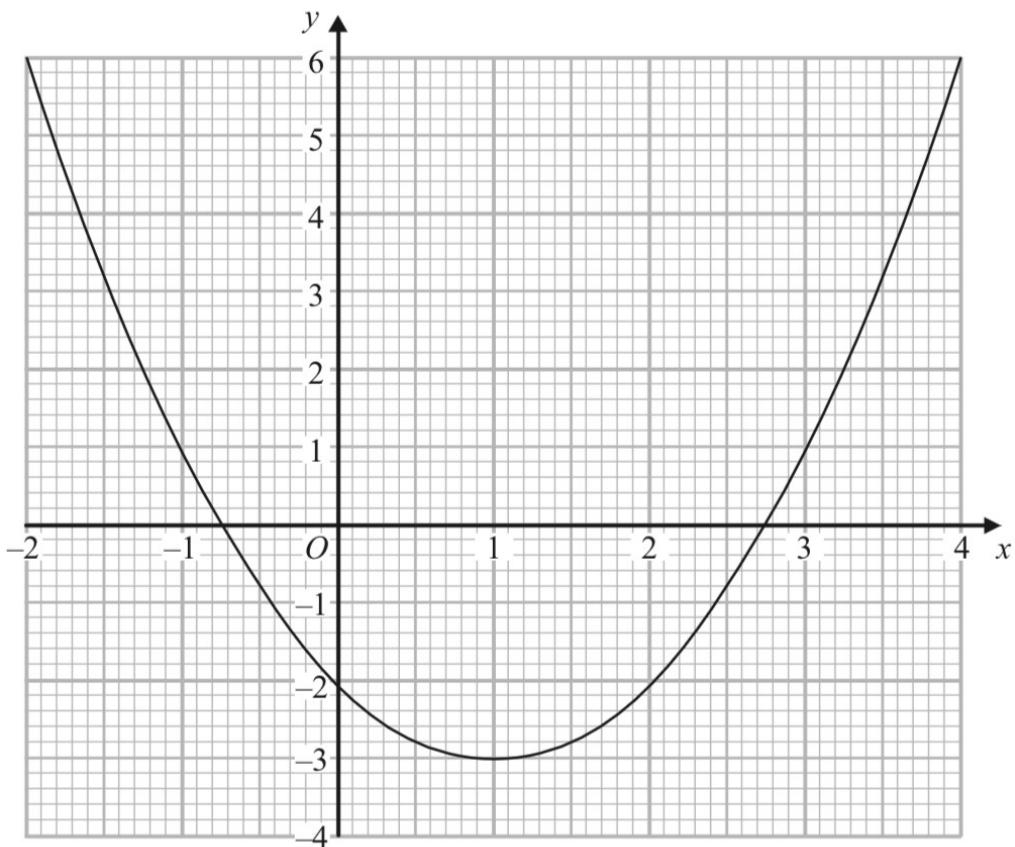
(a) Write down the coordinates of the turning point of the graph.

(........................ , ...)

(1)

(b) Write down estimates for the roots of $f(x) = 0$

....

(1)

(c) Use the graph to find an estimate for $f(1.5)$

....

(1)

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Question 2 (6 Marks)

(a) Find the value of $\sqrt[4]{81 \times 10^8}$

....

(2)

(b) Find the value of $64^{-\frac{1}{2}}$

....

(2)

(c) Write $\dfrac{3^n}{9^{n-1}}$ as a power of 3

..

(2)

Question 3 (3 Marks)

The table shows information about the weights, in grams, of some potatoes.

Weight (*w* grams)	Number of potatoes
$50 < w \leqslant 70$	20
$70 < w \leqslant 80$	50
$80 < w \leqslant 90$	60
$90 < w \leqslant 110$	30

On the grid, draw a histogram for this information.

Frequency density

Weight (*w* grams)

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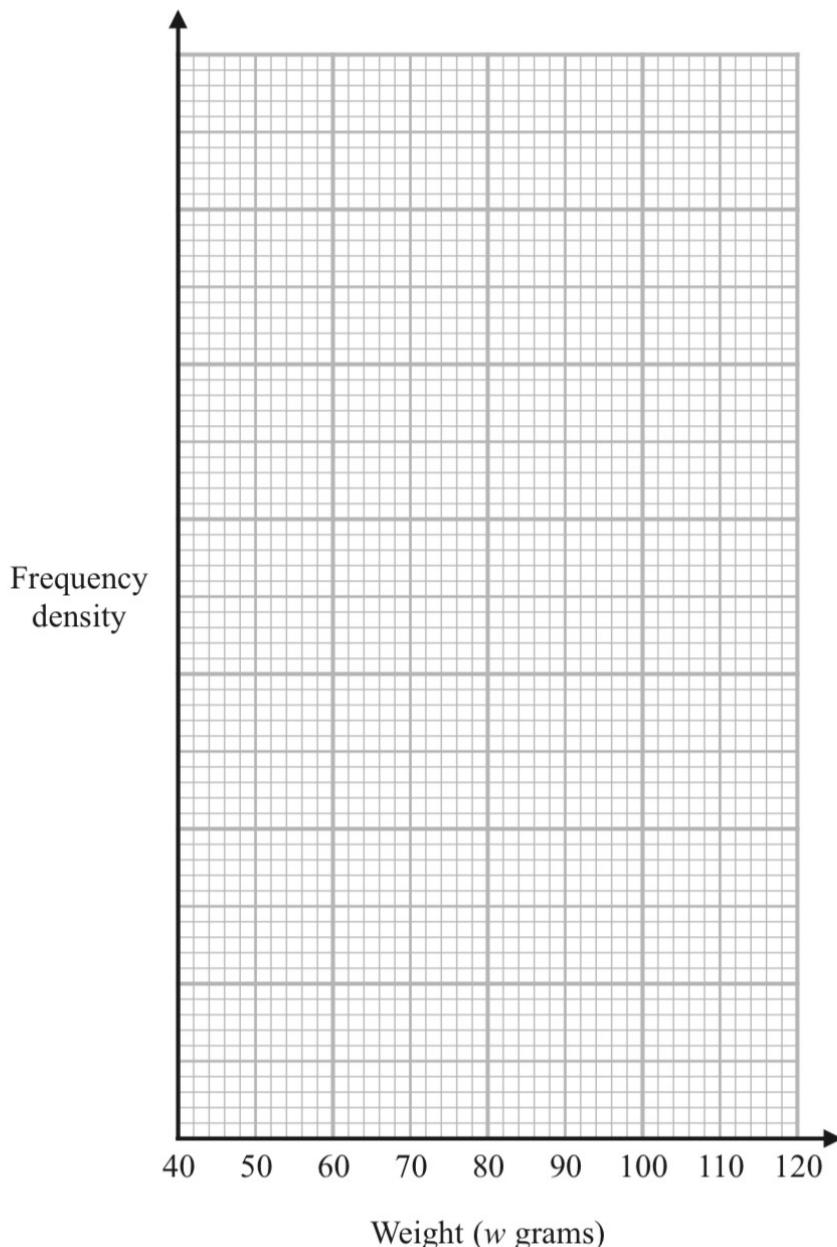
Question 4 (3 Marks)

Here is a shape with all its measurements in centimetres.

$x + 1$

4

$x + 11$

$2x + 6$
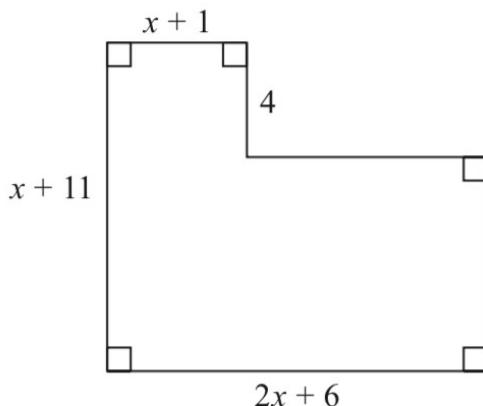
The area of the shape is A cm²

Show that $A = 2x^2 + 24x + 46$

(Total 15 Marks)