Write your name here

Surname	Other Names

Mathematics

June 2017 Paper 1 (Non Calculator)
Part 1 (First half of the paper)
Edexcel Higher Tier

Time: 45 minutes

Q	Topic	Max Mark	My Marks
1	Scatter Graphs	5	
2	Prime Factors	2	
3	Multiplying Decimals	3	
4	Simplifying Algebra, Forming Equations	3	
5	Pythagoras' Theorem	5	
6	The Equation of a Line, Parallel Lines	2	
7	Reverse Mean	3	
8	Standard Form	3	
9	Reverse Percentages	2	
10	Expanding Triple Brackets	3	
11	Quadratic Graphs	3	
12	Negative and Fractional Indices	4	
13	Direct and Inverse Proportion	4	
	Total	42	

Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1   The scatter graph shows the maximum temperature and the number of hours of sunshine in fourteen British towns on one day.
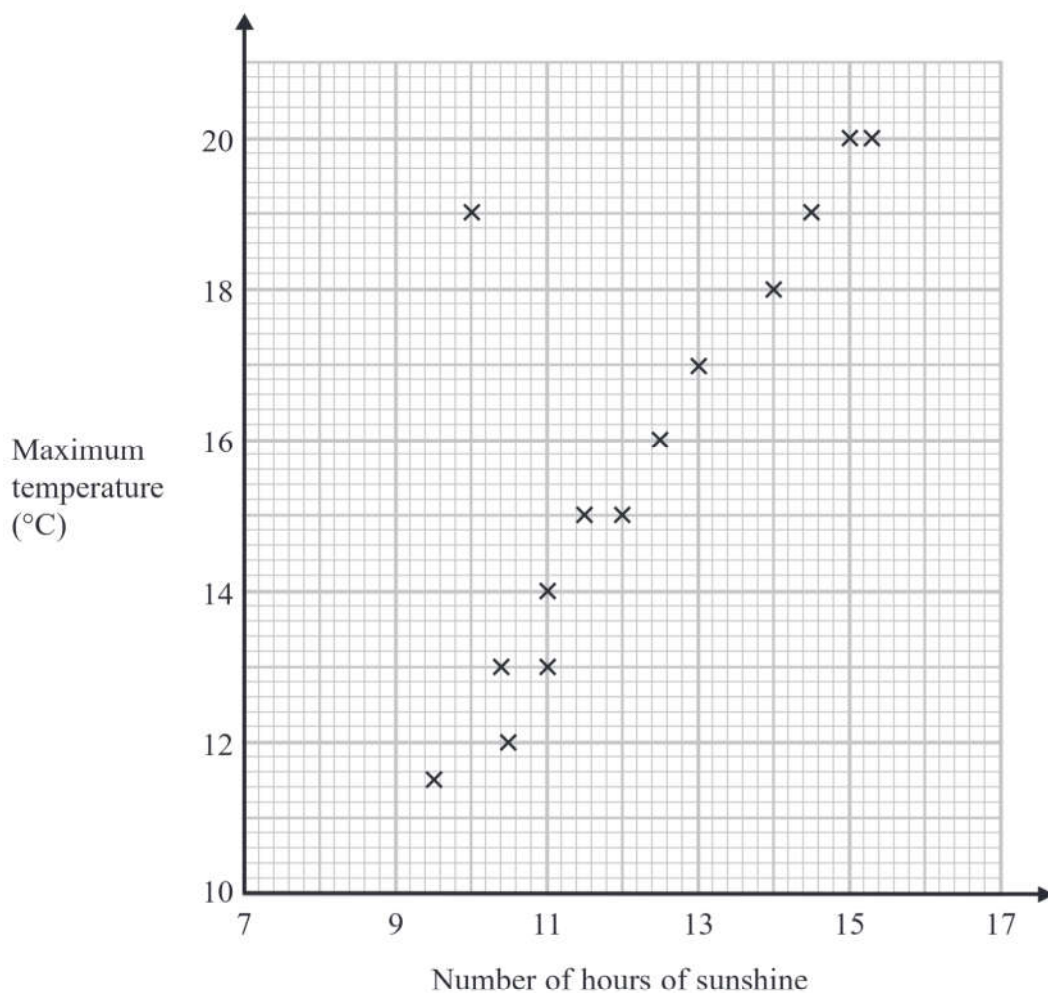
One of the points is an outlier.

(a) Write down the coordinates of this point.

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

(1)

(b) For all the other points write down the type of correlation.

....

(1)

On the same day, in another British town, the maximum temperature was 16.4°C.

(c) Estimate the number of hours of sunshine in this town on this day.

.... hours

(2)

A weatherman says,

"Temperatures are higher on days when there is more sunshine."

(d) Does the scatter graph support what the weatherman says?
Give a reason for your answer.

....

....

(1)

(Total for Question 1 is 5 marks)

2 Express 56 as the product of its prime factors.

....

(Total for Question 2 is 2 marks)

3 Work out 54.6×4.3

....

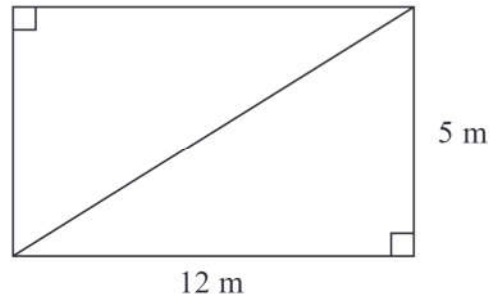**(Total for Question 3 is 3 marks)**

4
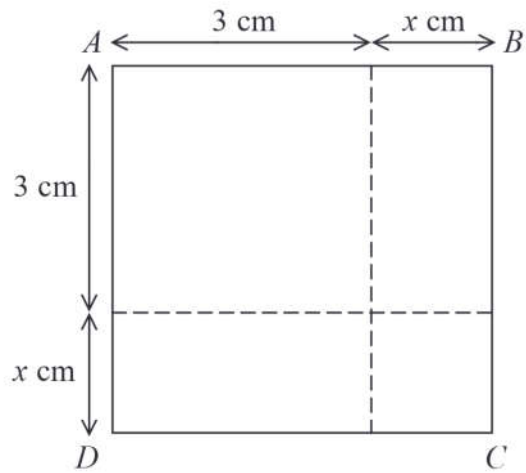
The area of square $ABCD$ is 10 cm².

Show that $x^2 + 6x = 1$

(Total for Question 4 is 3 marks)

5 This rectangular frame is made from 5 straight pieces of metal.

The weight of the metal is 1.5 kg per metre.

Work out the total weight of the metal in the frame.

.... kg

(Total for Question 5 is 5 marks)

6   The equation of the line L_1 is $y = 3x - 2$
The equation of the line L_2 is $3y - 9x + 5 = 0$

Show that these two lines are parallel.

(Total for Question 6 is 2 marks)

7 There are 10 boys and 20 girls in a class.
The class has a test.

The mean mark for all the class is 60
The mean mark for the girls is 54

Work out the mean mark for the boys.

....

8 (a) Write 7.97×10^{-6} as an ordinary number.

....

(1)

(b) Work out the value of $(2.52 \times 10^5) \div (4 \times 10^{-3})$
Give your answer in standard form.

....

(2)

9 Jules buys a washing machine.

20% VAT is added to the price of the washing machine.
Jules then has to pay a total of £600

What is the price of the washing machine with **no** VAT added?
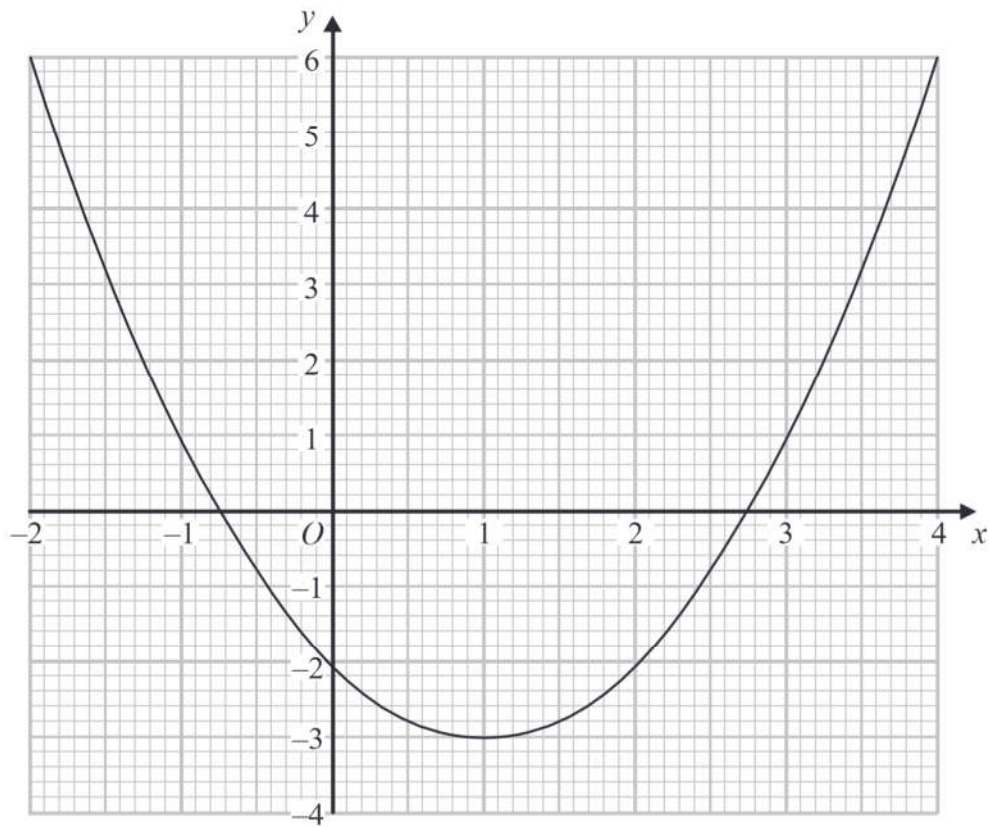
£.......................................

(Total for Question 9 is 2 marks)

10 Show that $(x + 1)(x + 2)(x + 3)$ can be written in the form $ax^3 + bx^2 + cx + d$
where a, b, c and d are positive integers.

(Total for Question 10 is 3 marks)

11 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)

(Total for Question 11 is 3 marks)

12 (a) Find the value of $81^{-\frac{1}{2}}$

....

(2)

(b) Find the value of $\left(\dfrac{64}{125}\right)^{\frac{2}{3}}$

....

(2)

(Total for Question 12 is 4 marks)

13 The table shows a set of values for x and y.

x	1	2	3	4
y	9	$2\dfrac{1}{4}$	1	$\dfrac{9}{16}$

y is inversely proportional to the square of x.

(a) Find an equation for y in terms of x.

....

(2)

(b) Find the positive value of x when $y = 16$

....

(2)

(Total for Question 13 is 4 marks)

Turn over ▶