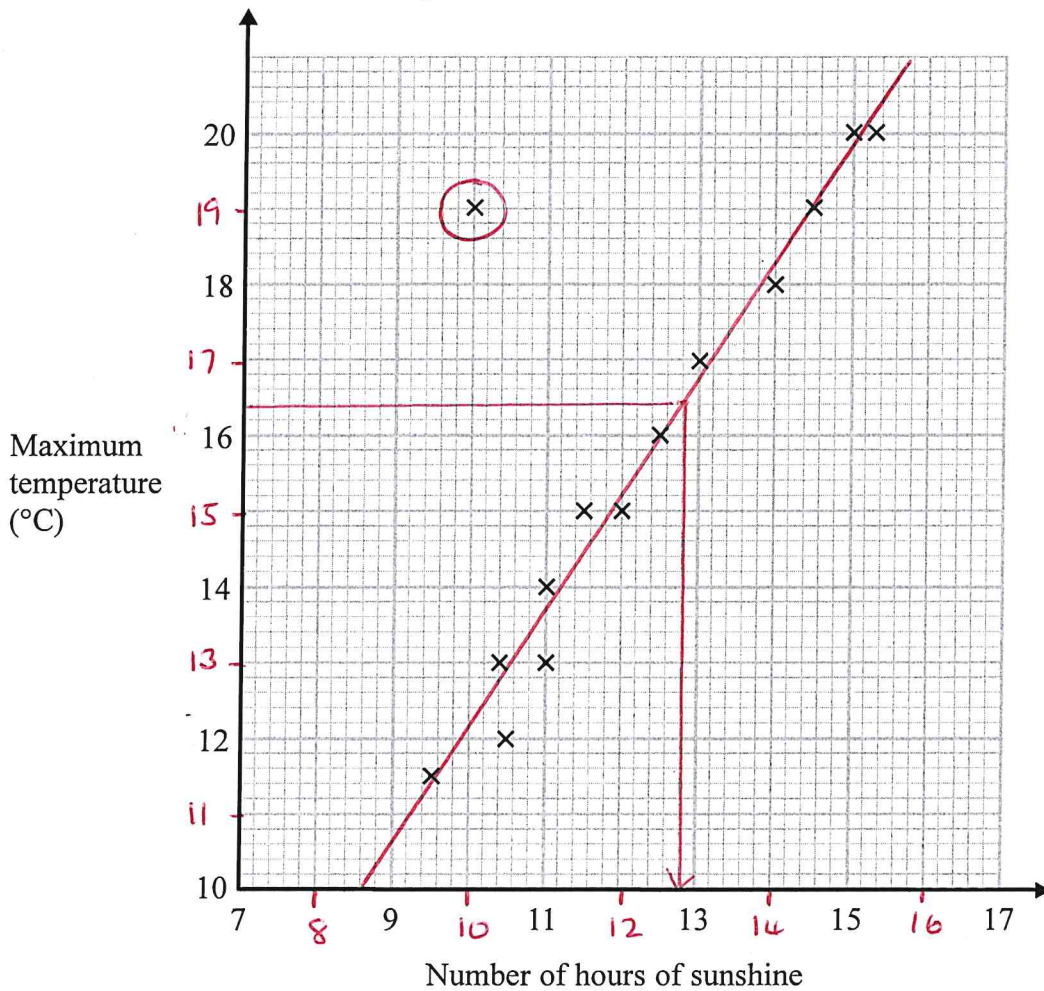


21/1 The scatter graph shows the maximum temperature and the number of hours of sunshine in fourteen British towns on one day.



One of the points is an outlier.

(a) Write down the coordinates of this point.

( ..... 10 ..... , ..... 19 ..... )  
(1)

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

..... positive .....  
(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.

..... 12.8 ..... hours  
(2)

A weatherman says, "Temperatures are higher on days when there is more sunshine."

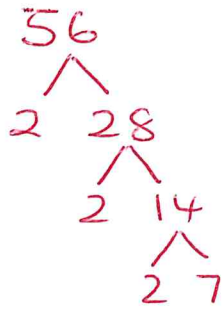
(d) Does the scatter graph support what the weatherman says?

Give a reason for your answer.

..... Yes, when there was more hours of sunshine .....  
..... the maximum temperature was higher .....  
(1)

(Total for Question 21/1 is 5 marks)

22/2 Express 56 as the product of its prime factors.



$$2 \times 2 \times 2 \times 7$$

(Total for Question 22/2 is 2 marks)

23/3 Work out  $54.6 \times 4.3$

$\times$	40	3
500	20000	1500
40	1600	120
6	240	18

$$\begin{array}{r}
 20000 \\
 1500 \\
 1600 \\
 120 \\
 240 \\
 18 \\
 \hline
 23478
 \end{array}$$

$$234.78$$

(Total for Question 23/3 is 3 marks)

24/4

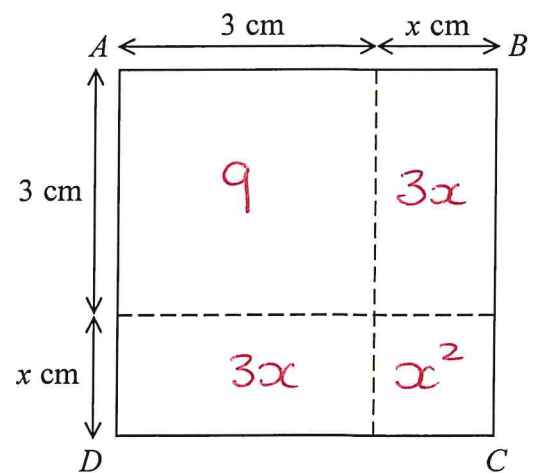
The area of square  $ABCD$  is  $10 \text{ cm}^2$ .

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

$$9 + 3x + 3x + x^2 = 10$$

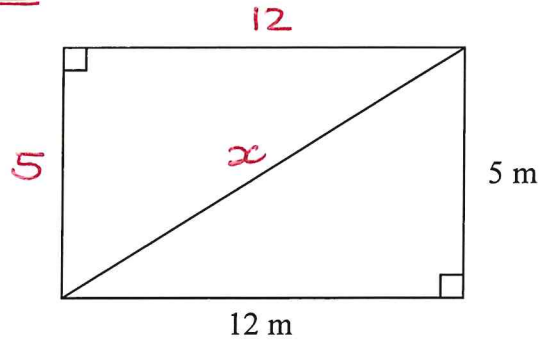
$$9 + 6x + x^2 = 10$$

$$\underline{x^2 + 6x = 1}$$



(Total for Question 24/4 is 3 marks)

25/5 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.

By Pythag  $c^2 = a^2 + b^2$   
 $x^2 = 5^2 + 12^2$   
 $x^2 = 25 + 144$   
 $x^2 = 169$   
 $x = \sqrt{169}$   
 $x = 13\text{ m}$

total length =  $12 + 12 + 5 + 5 + 13$   
 $= 47\text{ m}$

total weigh =  $47 \times 1.5$

$$\begin{array}{r} 47.0 \\ + 23.5 \\ \hline 70.5 \\ \hline \end{array}$$

70.5..... kg

(Total for Question 25/5 is 5 marks)

26/6 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.

$$\begin{aligned} \text{line 1} \\ y &= 3x - 2 \\ \underline{\text{gradient} &= 3} \end{aligned}$$

$$\begin{aligned} \text{line 2} \\ 3y - 9x + 5 &= 0 \\ 3y &= 9x - 5 \\ y &= \frac{9x}{3} - \frac{5}{3} \\ y &= 3x - \frac{5}{3} \\ \underline{\text{gradient} &= 3} \end{aligned}$$

The lines have the same gradient so they must be parallel.

(Total for Question 26/6 is 2 marks)

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