

## UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS International General Certificate of Secondary Education

	CANDIDATE NAME					
	CENTRE NUMBER	CANDIDA NUMBER	ГЕ			
*						
8 7	MATHEMATICS		0580/22			
4 2	Paper 2 (Extende	ed)	May/June 2013			
5			1 hour 30 minutes			
1746	Candidates answer on the Question Paper.					
* 8 9	Additional Materia	als: Electronic calculator Geometrical inst Tracing paper (optional)	ruments			

## READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.

Write in dark blue or black pen.

You may use a pencil for any diagrams or graphs.

Do not use staples, paper clips, highlighters, glue or correction fluid.

DO **NOT** WRITE IN ANY BARCODES.

## Answer **all** questions.

If working is needed for any question it must be shown below that question.

Electronic calculators should be used.

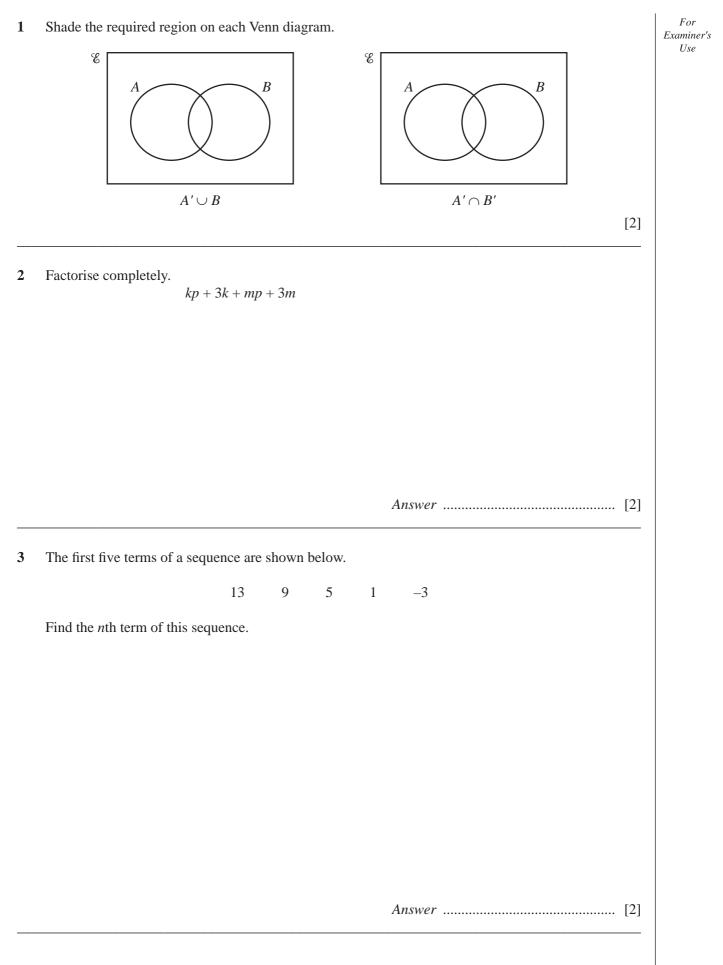
If the degree of accuracy is not specified in the question, and if the answer is not exact, give the answer to three significant figures. Give answers in degrees to one decimal place. For  $\pi$ , use either your calculator value or 3.142.

At the end of the examination, fasten all your work securely together. The number of marks is given in brackets [] at the end of each question or part question. The total of the marks for this paper is 70.

This document consists of **12** printed pages.



[Turn over



4 Calculate  $(4.3 \times 10^8) + (2.5 \times 10^7)$ .

Give your answer in standard form.

For Examiner's Use



NOT TO SCALE

Triangle *ABC* has a height of 8 cm and an area of  $42 \text{ cm}^2$ .

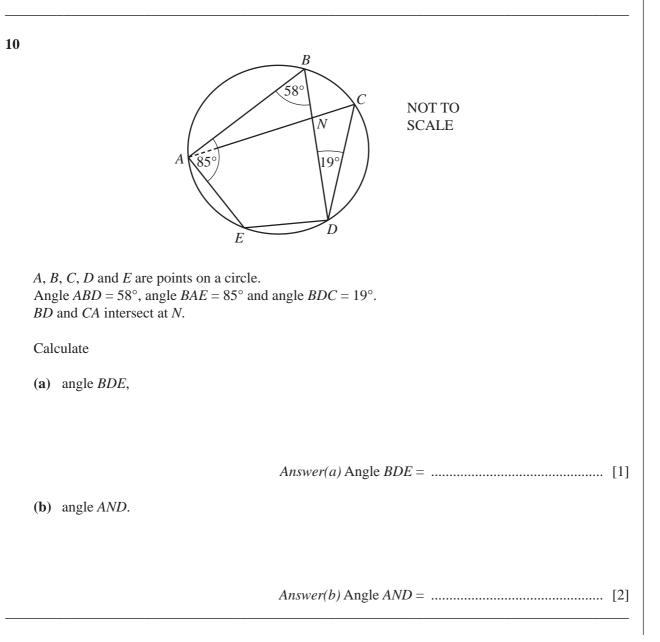
Calculate the length of *BC*.

*Answer BC* = ..... cm [2]

9 A car, 4.4 metres long, has a fuel tank which holds 65 litres of fuel when full.The fuel tank of a mathematically similar model of the car holds 0.05 litres of fuel when full.

Calculate the length of the model car in centimetres.

Answer ..... cm [3]



For Examiner's Use

For Without using a calculator, work out  $\frac{6}{7} \div 1\frac{2}{3}$ . Examiner's 11 Use Write down all the steps in your working. 12 Solve the equation. 5(2y - 17) = 60Answer  $y = \dots$  [3] 13 Carol invests \$6250 at a rate of 2% per year compound interest. Calculate the **total** amount Carol has after 3 years. 

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14 *y* is inversely proportional to  $x^3$ . y = 5 when x = 2.

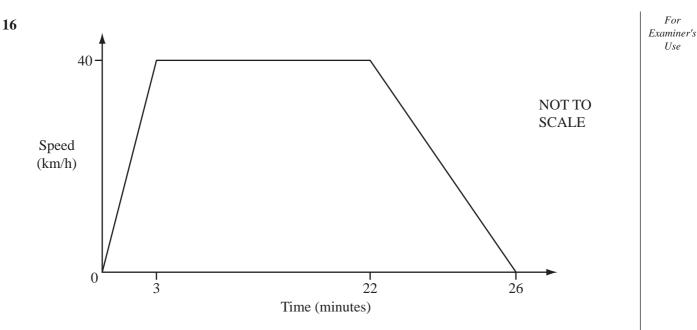
Find *y* when x = 4.

Answer  $y = \dots$  [3]

**15** Use the quadratic equation formula to solve

$$2x^2 + 7x - 3 = 0 \; .$$

Show all your working and give your answers correct to 2 decimal places.

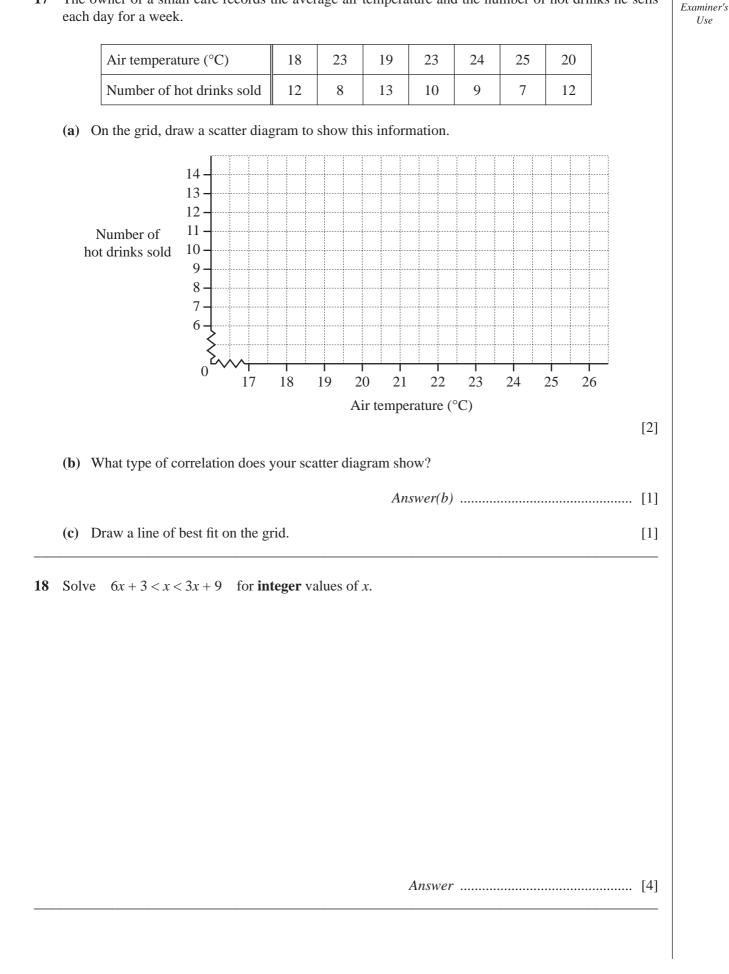


The diagram shows the speed-time graph of a train journey between two stations.

The train accelerates for 3 minutes, travels at a constant maximum speed of 40 km/h, then takes 4 minutes to slow to a stop.

Calculate the distance in kilometres between the two stations.

Answer ...... km [4]



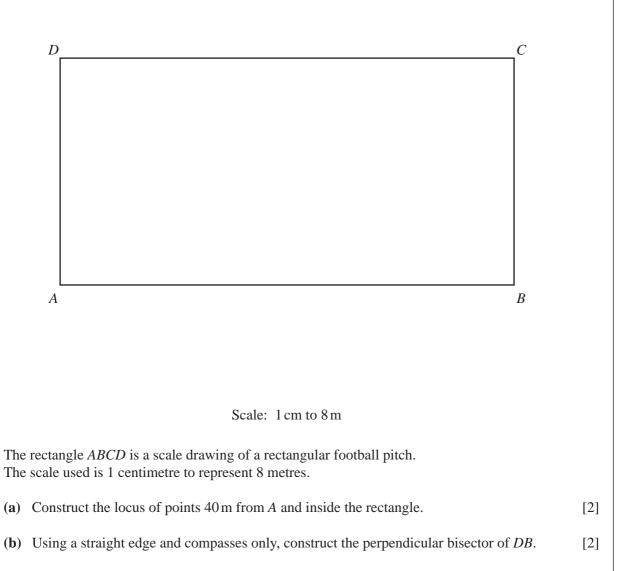
The owner of a small café records the average air temperature and the number of hot drinks he sells

For

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0580/22/M/J/13

For Examiner's Use



(c) Shade the region on the football pitch which is more than 40 m from A and nearer to D than to B. [1]

[2]

20	The heights, in metres, of 200 trees in a park are measured.	
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Height ( <i>h</i> m)	$2 < h \le 6$	$6 < h \le 10$	$10 < h \le 13$	$13 < h \le 17$	$17 < h \le 19$	$19 < h \le 20$
Frequency	23	47	45	38	32	15

(a) Find the interval which contains the median height.

(b) Calculate an estimate of the mean height.

*Answer(b)* ..... m [4]

(c) Complete the cumulative frequency table for the information given in the table above.

Height ( <i>h</i> m)	$2 < h \le 6$	$h \leq 10$	<i>h</i> ≤ 13	$h \leq 17$	$h \leq 19$	$h \leq 20$
Cumulative frequency	23					

Question 21 is printed on the next page.

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