M6

OCR RECOGNISING ACHIEVEMENT

GENERAL CERTIFICATE OF SECONDARY EDUCATION

MATHEMATICS C (GRADUATED ASSESSMENT)   **B276B**

MODULE M6 – SECTION B

Candidates answer on the question paper.

OCR supplied materials:
None

Other materials required:
* Geometrical instruments
* Tracing paper (optional)
* Scientific or graphical calculator

**Tuesday 1 March 2011
Morning**

Duration: 30 minutes

Candidate forename		Candidate surname	

| Centre number					Candidate number				

INSTRUCTIONS TO CANDIDATES

* Write your name, centre number and candidate number in the boxes above. Please write clearly and in capital letters.
* Use black ink. Pencil may be used for graphs and diagrams only.
* Read each question carefully. Make sure you know what you have to do before starting your answer.
* Write your answer to each question in the space provided. Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).
* Show your working. Marks may be given for a correct method even if the answer is incorrect.
* Answer **all** the questions.
* Do **not** write in the bar codes.

INFORMATION FOR CANDIDATES

* The number of marks is given in brackets **[ ]** at the end of each question or part question.
* Section B starts with question 7.
* You are expected to use a calculator in Section B of this paper.
* Use the π button on your calculator or take π to be 3·142 unless the question says otherwise.
* The total number of marks for this Section is **25**.
* This document consists of **8** pages. Any blank pages are indicated.

OCR is an exempt Charity

Turn over

Formulae Sheet

Area of trapezium $= \frac{1}{2}(a + b)h$
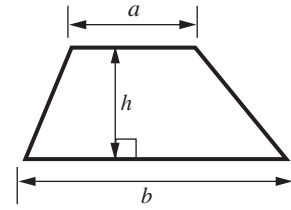
Volume of prism = (area of cross-section) × length
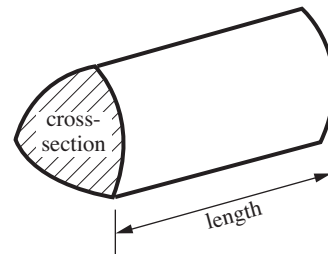
PLEASE DO NOT WRITE ON THIS PAGE

7 **(a)** Calculate the reciprocal of 25 as a decimal.

(a) .... **[1]**

(b) Calculate.

$$\frac{16 \times 5^2}{52 \cdot 6 - 30 \cdot 5}$$

Give your answer correct to 1 decimal place.

(b) .... **[2]**

8 Mr Green is taking some students on a school trip.
He takes 42 boys and 56 girls.

Write down the ratio of boys to girls in its simplest form.

.... : .... **[2]**

9 Mr Ali asked some students "In how many subjects were you given homework last week?"
He recorded their answers in a table.

Subjects	Frequency
0	5
1	4
2	2
3	1
4	6
5	3
6	5
7	4

(a) Write down the mode.

(a) .... **[1]**

(b) Calculate the mean.

(b) .... **[3]**

10 **(a)** Complete this table of values for $y = 5x - 3$.

x	$^-1$	0	1	2
y			2	

[1]

(b) Draw the graph of $y = 5x - 3$.
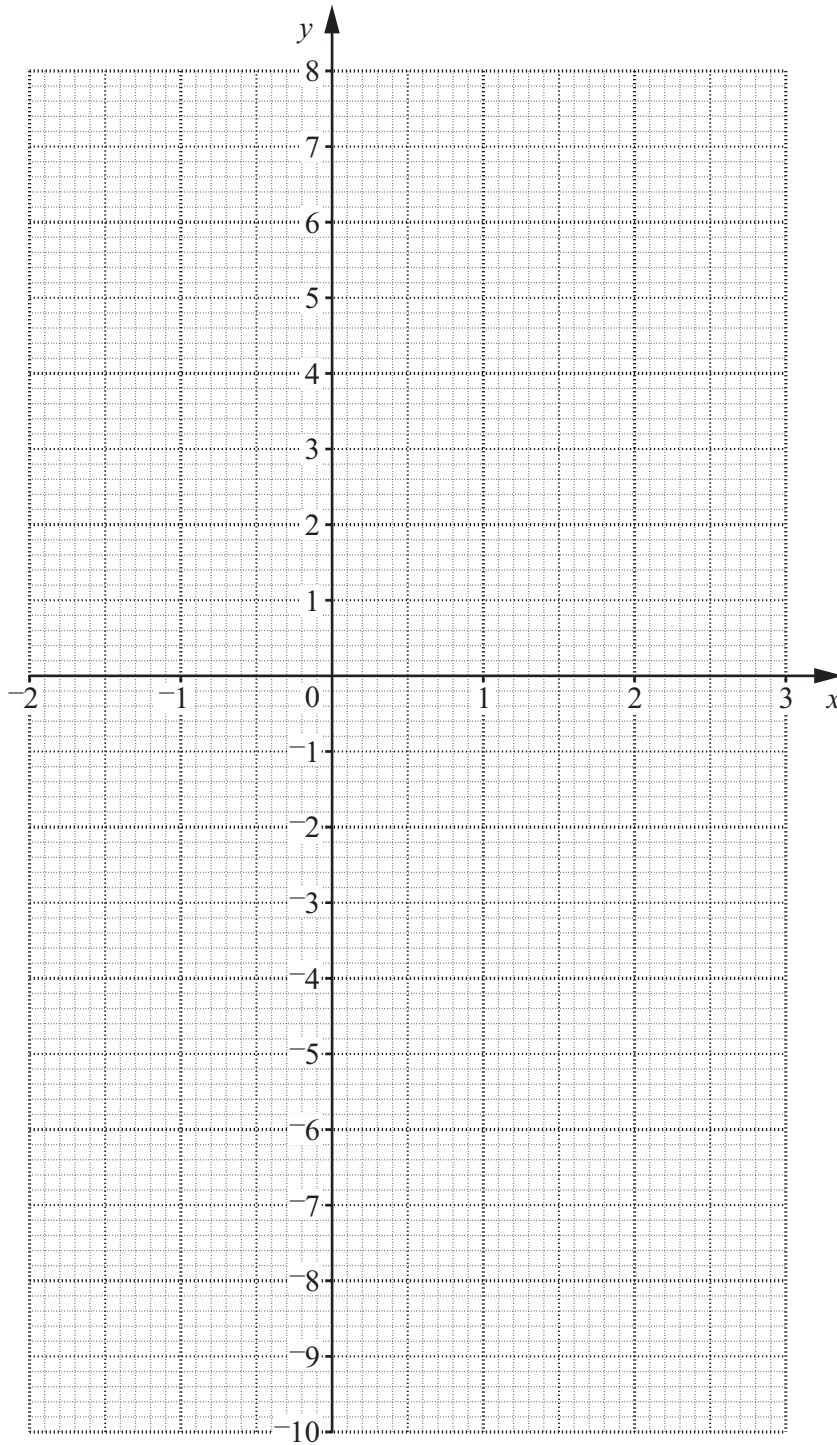
[2]

(c) Use your graph to find the value of x when $y = 4$.

(c) .... [1]

Turn over

11 (a) Work out the value of $7x + 3y$ when $x = 4$ and $y = {}^-5$.

(a) .... **[2]**

(b) Factorise.

$$6x - 9$$

(b) .... **[1]**

12

60°

a
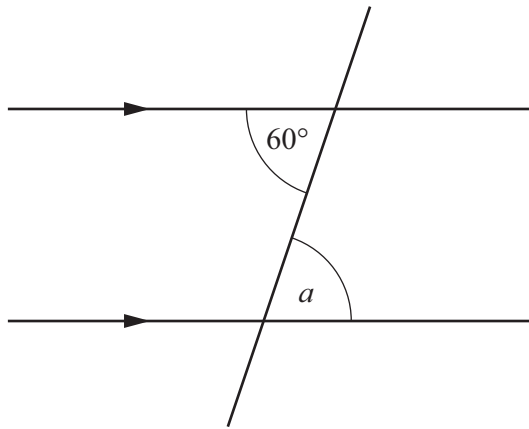
Not to scale

Complete this sentence.

Angle *a* = ... ° because ....

.... **[2]**

13 This table shows the times it took 10 people to run 100 m and how far they each threw the discus.

Time (seconds)	14·5	17·2	15·4	13·5	12·8	20·6	14·8	16·2	18·3	12·0
Distance (metres)	17·6	26·5	22·6	17·8	19·2	29·0	18·6	21·3	27·5	15·5

The results for the first five people are plotted on the scatter diagram below.
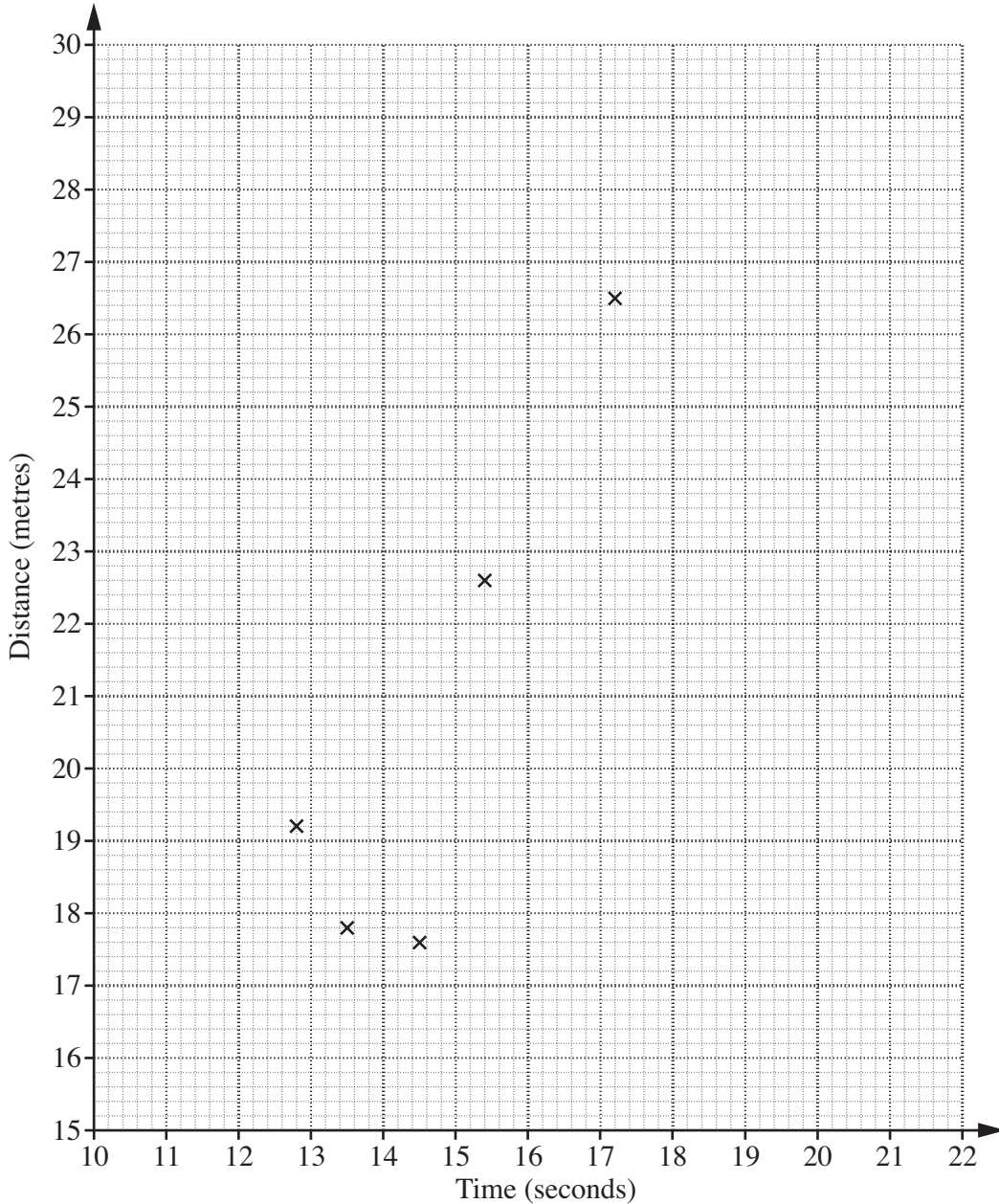
(a) Complete the scatter diagram. **[2]**

(b) Describe the relationship between the time for running 100 m and how far the discus is thrown.

.... **[1]**

TURN OVER FOR QUESTION 14

14
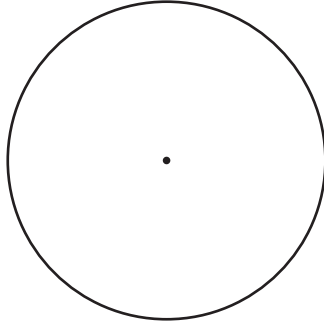
(a) Draw a chord on the circle. **[1]**

(b) Kevin has a circular pond of radius of 1·8 m.

Calculate the area of the pond.
Give the units of your answer.

(b) .... **[3]**