OCR
RECOGNISING ACHIEVEMENT

OXFORD CAMBRIDGE AND RSA EXAMINATIONS
General Certificate of Secondary Education

MATHEMATICS C (Graduated Assessment) 1966/2342A

INTERMEDIATE TERMINAL PAPER – SECTION A

Tuesday **8 JUNE 2004** Afternoon 1 hour

Candidates answer on the question paper.
Additional materials:
Geometrical instruments
Tracing paper (optional)
Pie chart scale (optional)

Candidate Name	Centre Number	Candidate Number

TIME 1 hour

INSTRUCTIONS TO CANDIDATES

- Write your name, Centre number and candidate number in the boxes above.
- Answer **all** the questions.
- Write your answers, in blue or black ink, on the dotted lines unless the question says otherwise.
- Read each question carefully and make sure you know what you have to do before starting your answer.
- There is a space after most questions. Use it to do your working. In many questions marks will be given for a correct method even if the answer is incorrect.

INFORMATION FOR CANDIDATES

- The number of marks is given in brackets [ ] at the end of each question or part question.
- The total number of marks for this Section is 50.

WARNING
You are not allowed to use a calculator in Section A of this paper.

FOR EXAMINER'S USE	
Section A	
Section B	
TOTAL	

This question paper consists of 11 printed pages and 1 blank page.

Registered Charity Number: 1066969
[Turn over

1 Paul is playing a CD.

The machine selects from these tracks randomly.

2 7 8 9 13 15 16 17 20

(a) What is the probability that the number of the first track played is

(i) an odd number,

(a)(i) .....[1]

(ii) a multiple of 5?

(ii) .....[1]

(b) In fact, the number of the first track played is 16.
Once a track is played it is not repeated.

What is the probability that the number of the second track is prime?

(b) .....[2]

4

2

SUPERSTROLL

SPONSORED WALK

38 miles

(a) Catherine completed the Superstroll.
She was sponsored £14·60 for each mile.

Calculate how much she raised.

(a) £.....[3]

(b) She completed the first 14 miles at an average speed of 4 miles per hour.

How long did she take for the first 14 miles?
Give your answer in hours and minutes.

(b) ..... hours ..... minutes [3]

6

3 Paul found the playing time of 60 tracks from his CD collection.
His results are summarised in the table below.

Time (t minutes)	$1 < t \leqslant 2$	$2 < t \leqslant 3$	$3 < t \leqslant 4$	$4 < t \leqslant 5$	$5 < t \leqslant 6$	$6 < t \leqslant 7$
Frequency	3	12	17	19	6	3

(a) Write down the modal class.

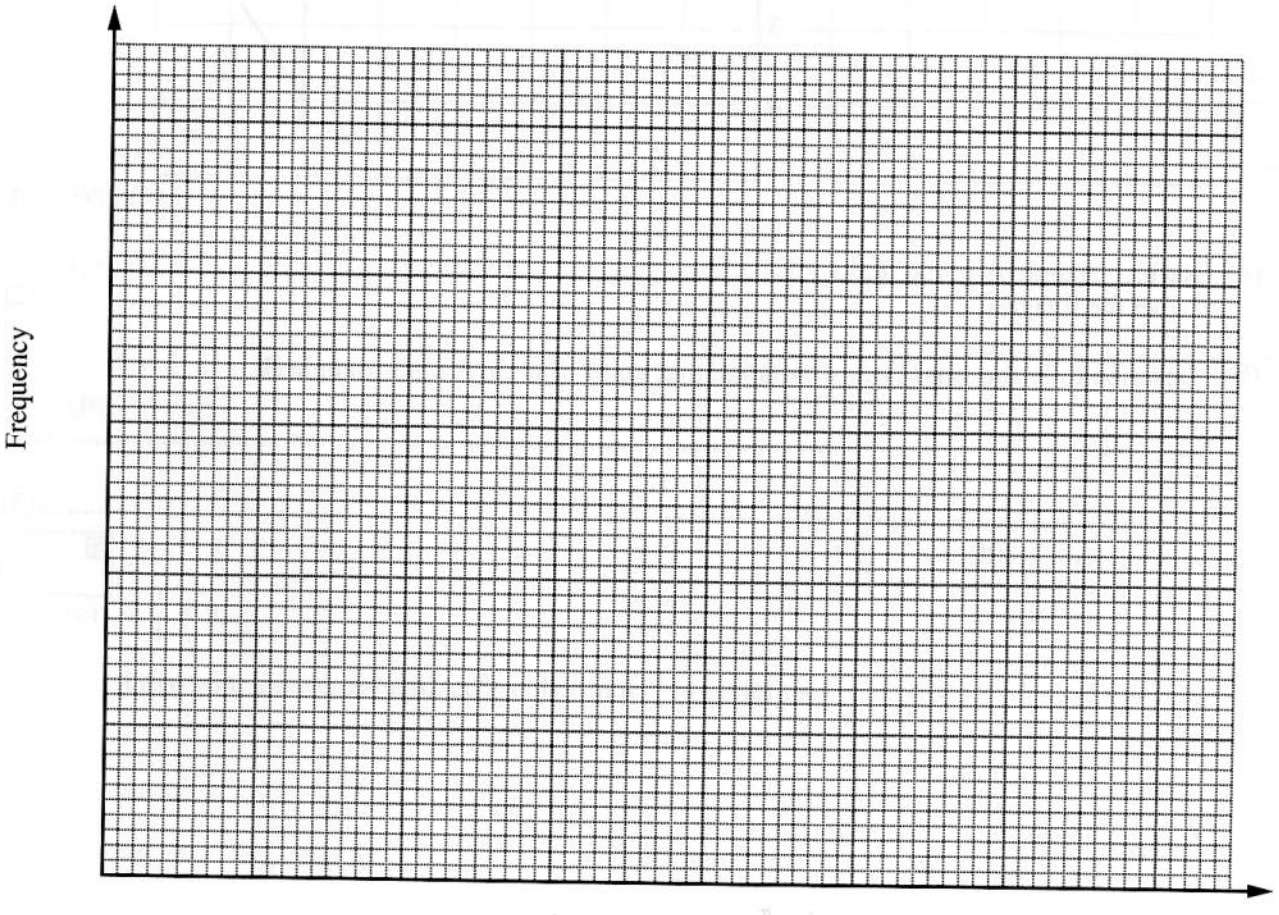
(a) .....[1]

(b) Which class interval contains the median?
Explain how you know this.

..... because .....

.....[2]

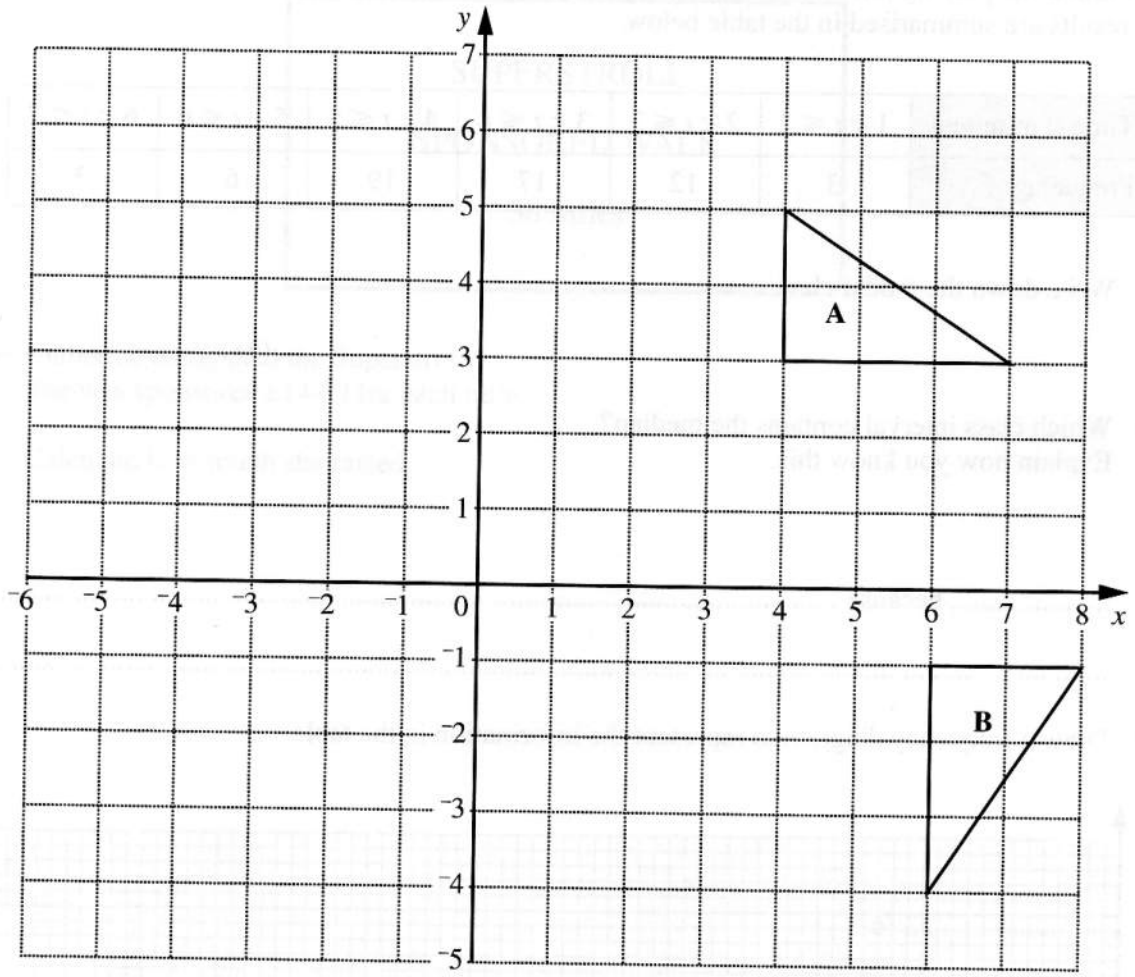
(c) Draw a frequency diagram to represent the information in the table.



[3]

6

4



(a) Reflect triangle **A** in the line $x = 1$.
Label the image **C**. [2]

(b) Describe fully the **single** transformation that maps triangle **A** onto triangle **B**.

.....

.....[3]

5

5 **(a)** These are the first four terms of a sequence.

50 47 42 35

Explain how to work out the next two terms.

.....

.....[1]

(b) These are the first five terms of another sequence.

7 13 19 25 31

(i) Write down the tenth term.

(b)(i) .....[1]

(ii) Find the nth term of this sequence.

(ii) .....[2]

4

6 Work out.

(a) $0{\cdot}2 \times 0{\cdot}4$

(a) .....[1]

(b) $5^3 \times 2^2$

(b) .....[2]

(c) $2\frac{3}{4} \times 2\frac{2}{3}$

Give your answer as a mixed number in its lowest terms.

(c) .....[3]

6

7 **(a)** Solve.

$$5(2x - 1) = 6x + 1$$

(a) ..... [3]

(b) Solve algebraically these simultaneous equations.

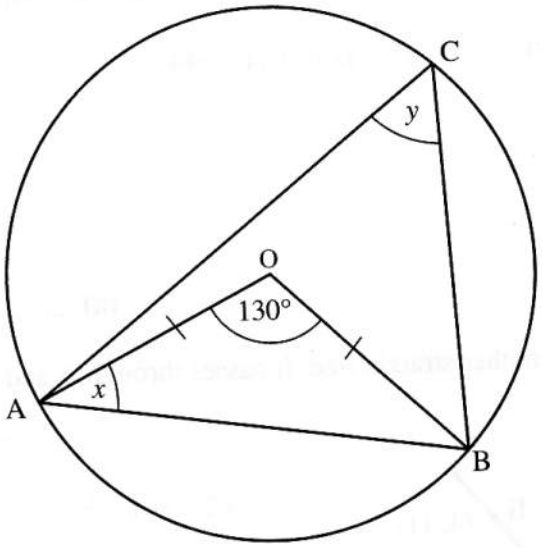
$$4x + y = 8$$
$$3x + 2y = 1$$

(b) x = ...

y = ...[3]

6

8



Not to scale

ABC is a circle, centre O.
Angle AOB = 130°.

(a) Work out angle x.
Give a reason for your answer.

x = ...° because .....

.....

.....[2]

(b) Work out angle y.
Give a reason for your answer.

y = ...° because .....

.....[2]

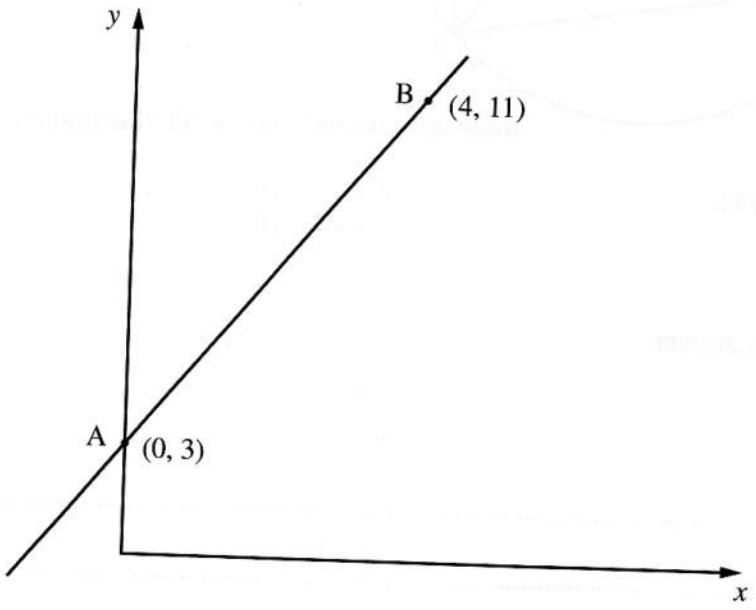
4

9 **(a)** The equation of a straight line is $y = 4x - 2$.

Make x the subject of this equation.

(a) .....[2]

(b) The diagram shows the sketch of another straight line. It passes through A and B.



Not to scale

Find the equation of the line.

(b) .....[3]

5

10 **(a)** Expand and simplify.

$$3(4x + 1) + 2(2x - 1)$$

(a) .....[2]

(b) Factorise.

$$x^2 + 10x + 24$$

(b) ..... [2]

4