| Centre No. | | | | | | Paper Reference | | | | | | Surname | | Initial(s) |
| Candidate No. | | | | | | **5** | **5** | **4** | **3** | **H** | **/** | **11** | **B** | Signature |

Edexcel GCSE

Mathematics B (Modular) – 2544

Paper 11 – Section B (Non-Calculator)

Higher Tier

Unit 3 Test

Monday 12 November 2007 – Afternoon

Time for Section B: 30 minutes

Materials required for examination
Ruler graduated in centimetres and
millimetres, protractor, compasses,
pen, HB pencil, eraser.
Tracing paper may be used.

Items included with question papers
Nil

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials and signature.
Check that you have the correct question paper.
Answer ALL the questions. Write your answers in the spaces provided in this question paper.
You must NOT write on the formulae page. Anything you write on the formulae page will gain NO credit.
If you need more space to complete your answer to any question, use additional answer sheets.

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. **(2)**.
This section has 11 questions. The total mark for this section is 25. The total mark for this paper is 50.
There are 8 pages in this question paper. Any blank pages are indicated.
Calculators may be used for Section A only.

Advice to Candidates

Show all stages in any calculations.
Work steadily through the paper. Do not spend too long on one question.
If you cannot answer a question, leave it and attempt the next one.
Return at the end to those you have left out.

Turn over
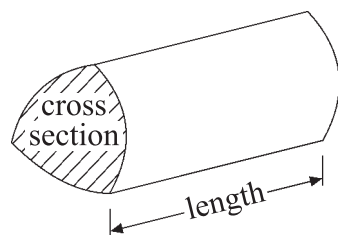
edexcel
advancing learning, changing lives
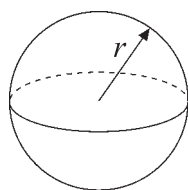
Formulae: Higher Tier

You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

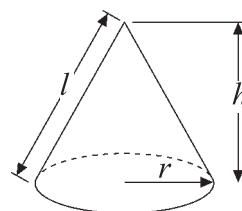**Volume of a prism** = area of cross section × length

Volume of sphere $= \frac{4}{3}\pi r^3$
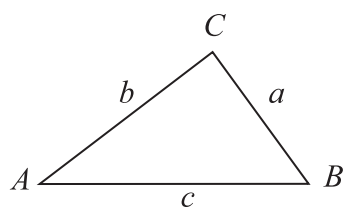
Surface area of sphere $= 4\pi r^2$

Volume of cone $= \frac{1}{3}\pi r^2 h$

Curved surface area of cone $= \pi r l$

In any triangle ABC

Sine Rule $\dfrac{a}{\sin A} = \dfrac{b}{\sin B} = \dfrac{c}{\sin C}$

Cosine Rule $a^2 = b^2 + c^2 - 2bc \cos A$

Area of triangle $= \frac{1}{2}ab \sin C$

The Quadratic Equation

The solutions of $ax^2 + bx + c = 0$ where $a \neq 0$, are given by

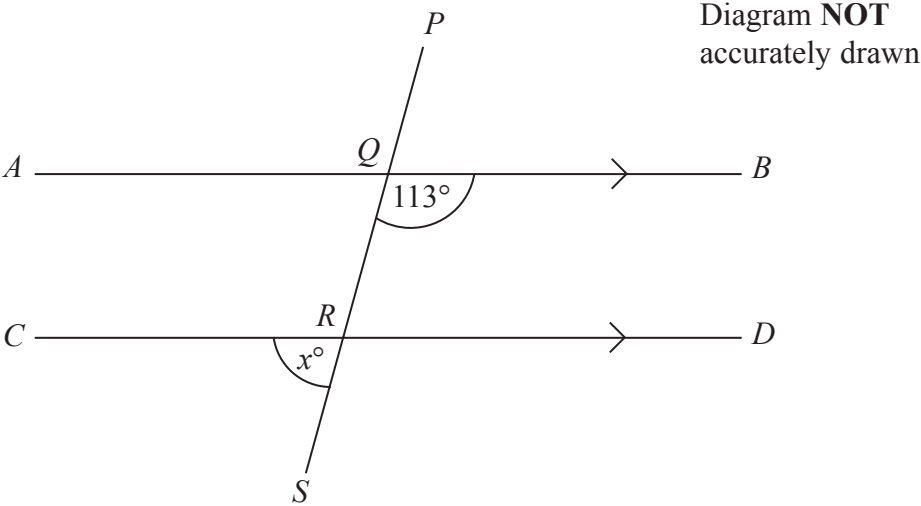$$x = \frac{-b \pm \sqrt{(b^2 - 4ac)}}{2a}$$

SECTION B

Answer ALL ELEVEN questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

You must NOT use a calculator for this section.

1.

Diagram **NOT** accurately drawn

AQB, CRD and *PQRS* are straight lines.
AB is parallel to *CD*.
Angle *BQR* = 113°.

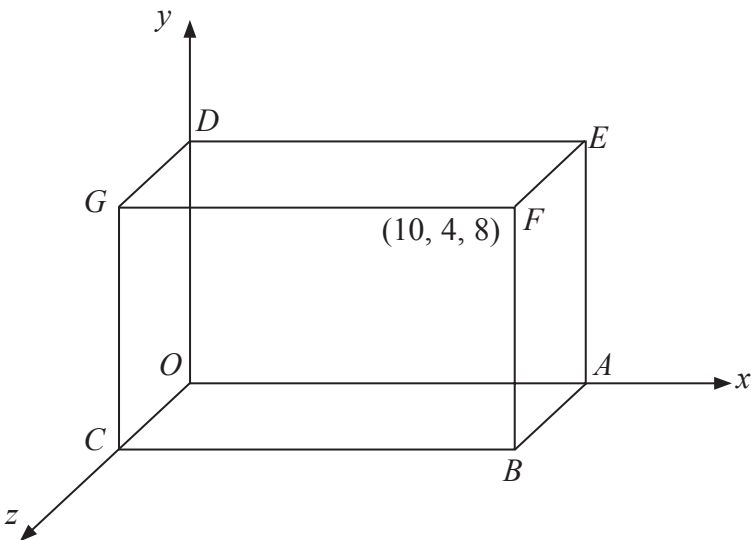Work out the value of *x*.

$x =$ Q1

(Total 2 marks)

2. The length of a pencil is 13 cm correct to the nearest centimetre.

Write down the minimum possible length of the pencil.

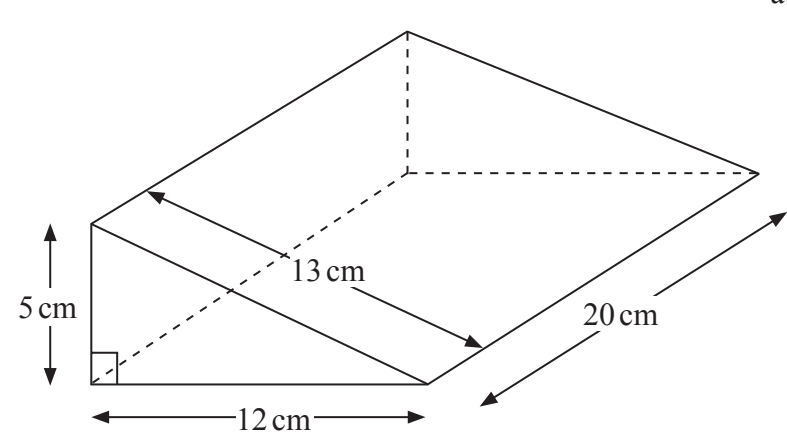....................................... Q2

(Total 1 mark)

N 3 0 6 6 2 A 0 3 0 8

3. Expand and simplify $3(2x + 5) + 4(3x + 1)$

....

(Total 2 marks)

4.

Diagram **NOT** accurately drawn

The diagram shows a cuboid.
The coordinates of the vertex F are $(10, 4, 8)$.

(a) Write down the coordinates of the vertex E.

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

(1)

(b) Find the coordinates of the midpoint of OE.

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

(2)

(Total 3 marks)

5.

Diagram **NOT**
accurately drawn

13 cm

5 cm

20 cm

12 cm

The diagram shows a right-angled triangular prism.

Work out the surface area of the triangular prism.

.... cm^2

(Total 3 marks)

Q5

6. Factorise $x^2 + 2x - 15$

....

(Total 2 marks)

Q6

7. Write down the value of

(a) $25^{\frac{1}{2}}$

....
(1)

(b) 9^0

....
(1) **Q7**

(Total 2 marks)

8. Find the Lowest Common Multiple (LCM) of 42 and 70

....
Q8

(Total 2 marks)

9. Expand and simplify $(3x + 4)(5x - 1)$

....
Q9

(Total 2 marks)

10. Convert the recurring decimal $2.14\dot{5}$ to a fraction.

.... **Q10**

(Total 3 marks)

11. Simplify fully $\dfrac{4a-20}{a^2-25}$

.... **Q11**

(Total 3 marks)

TOTAL FOR SECTION B: 25 MARKS
TOTAL FOR PAPER: 50 MARKS

END

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