Centre No.						Paper Reference								Surname	Initial(s)
Candidate No.						5	3	8	3	H	/	1	0	H	Signature

Paper Reference(s)

5383H/10H

Examiner's use only

Team Leader's use only

Edexcel GCSE

Mathematics

Unit 2 Stage 2

Higher Tier

Specimen Paper

Time: 30 minutes

Materials required for examination
Ruler graduated in centimetres and millimetres, protractor, compasses, pen, HB pencil, eraser, calculator. 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)**.
There are 9 questions in this question paper. The total mark for this paper is 25.
There are 8 pages in this question paper. Any blank pages are indicated.
Calculators may be used.
If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

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.

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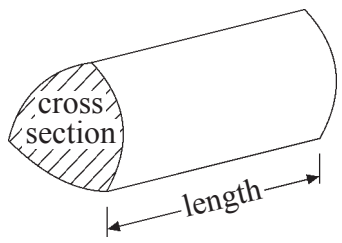
GCSE Mathematics

Formulae: Higher Tier

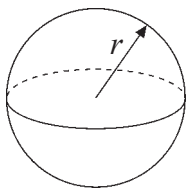
You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Volume of a prism = area of cross section × length



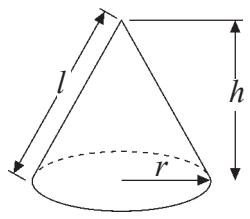
Volume of sphere $= \frac{4}{3}\pi r^3$

Surface area of sphere $= 4\pi r^2$

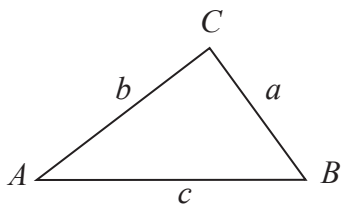


Volume of cone $= \frac{1}{3}\pi r^2 h$

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



In any triangle ABC



The Quadratic Equation

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

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

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

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

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

Leave blank

Answer all NINE questions.

Write your answers in the spaces provided.

You must write down all stages in your working.

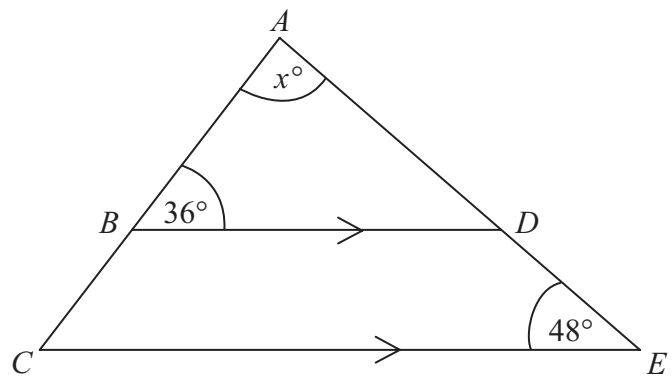
1. Work out $\dfrac{2.4+\sqrt{3.61}}{20}$

.....

(Total 2 marks)

Q1

2. *ABC* is a triangle.
BD is parallel to *CE*.



(a) Work out the value of *x*.

.....

(2)

(b) Give reasons for your answer.

.....

.....

(1)

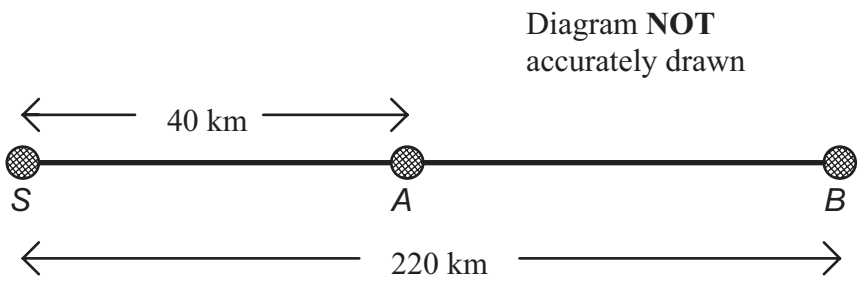
Q2

(Total 3 marks)

Turn over

Leave blank

3.



S, *A* and *B* are 3 towns

A is 40 km from *S*.
B is 220 km from *S*.

A car takes 2 hours 30 minutes to travel from *A* to *B*.

Work out the speed of the car.

..... km per hour

(Total 3 marks)

Q3

Leave blank

4. (a) Simplify $7^5 \times 7^8$

Write your answer as a power of 7

.....

(1)

(b) $\dfrac{3^{28} \times 3^x}{3^{26}} = 9$

Find the value of x.

.....

(2)

(Total 3 marks)

Q4

5. Use your calculator to work out

$$(6.4 \times 10^{18}) \div (1.25 \times 10^7)$$

Give your answer in standard form.

.....

(Total 2 marks)

Q5

Leave blank

6. (a) Expand $2x(x + 3)$

.....

(2)

(b) Factorise $y^2 - 5y - 6$

.....

(2)

(Total 4 marks)

Q6

Leave blank

7.

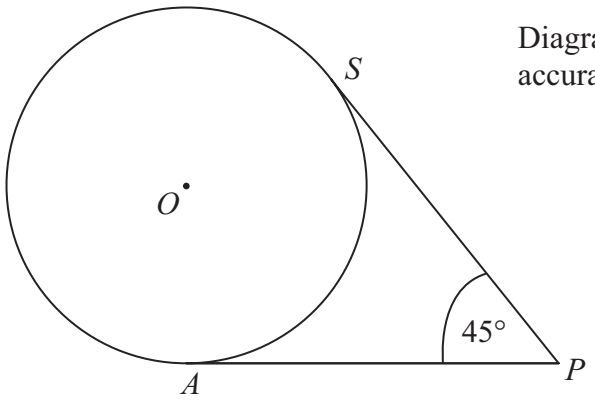


Diagram **NOT** accurately drawn

A and *S* are two points on a circle, with centre *O*.
PA and *PS* are tangents to the circle, centre *O*.
Angle *APS* = 45°.

Work out the size of angle *AOS*.

..... °

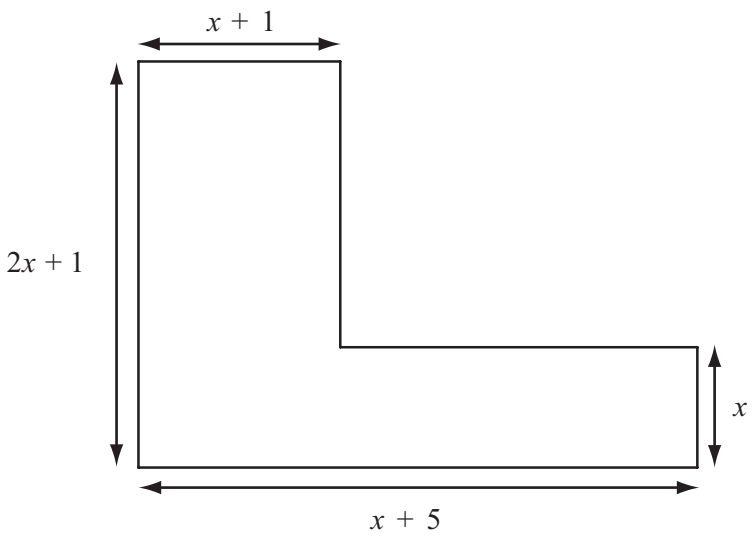
(Total 2 marks)

Q7

Turn over

Leave blank

8. The diagram below shows a six-sided shape made from rectangles.
All the measurements are given in centimetres.



The area of the shape is 21 cm^2.

Show that $2x^2 + 7x - 20 = 0$

Q8

(Total 3 marks)

9. n is any positive integer greater than 2

Show algebraically that the difference between the square of n and n is never a prime number.

Q9

(Total 3 marks)

TOTAL FOR PAPER: 25 MARKS

END