Surname	Initial(s)
Signature	

Paper Reference(s)

5382H/08

Edexcel GCSE

Mathematics (Modular) – 2381

Paper 8 (Non-Calculator)

Higher Tier

Unit 2 Stage 1

Thursday 12 June 2008 – Afternoon

Time: 30 minutes

Materials required for examination
Multiple Choice Answer Sheet
Ruler graduated in centimetres and millimetres, protractor, compasses, HB pencil, eraser.

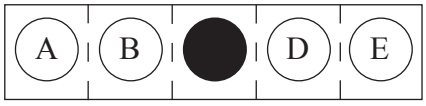
Items included with question papers
Nil

Instructions to Candidates

Use a HB pencil. Do not open this booklet until you are told to do so.

Before the test begins:
Check that the answer sheet is for the correct test and that it contains your candidate details.

How to answer the test:
For each question, choose the right answer, A, B, C, D or E and mark it in HB pencil on the answer sheet.
For example, the answer C would be marked as shown.



Mark only **one** answer for each question. If you change your mind about an answer, rub out the first mark **completely**, then mark your new answer.

Answer **all** the questions.
Do any necessary calculations and rough work in this booklet. **Calculators must not be used.**
You must not take this booklet or the answer sheet out of the examination room.

Information for Candidates

There are 25 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.

Advice to Candidates

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.

Printer's Log. No.
N33053A

Turn over

W850/R5382H/57570 6/6/6/3

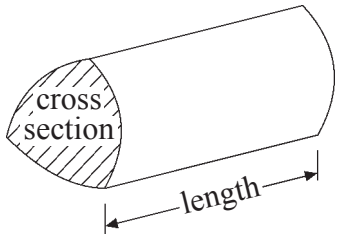
edexcel
advancing learning, changing lives

GCSE Mathematics

Formulae: Higher Tier

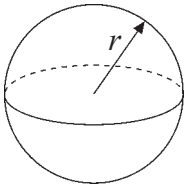
You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Volume of a prism = area of cross section × length



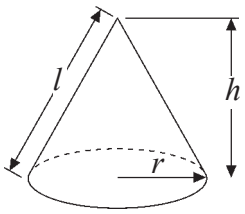
Volume of sphere $= \frac{4}{3}\pi r^3$

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

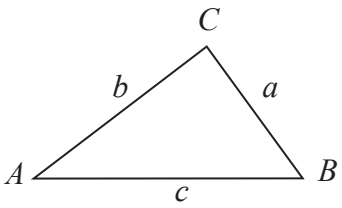


Volume of cone $= \frac{1}{3}\pi r^2 h$

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



In any triangle ABC



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 $= \frac{1}{2}ab\sin C$

The Quadratic Equation

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

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

Answer ALL TWENTY FIVE questions using the answer sheet.

You must NOT use a calculator.

1. What is $\frac{1}{3} \times \frac{2}{11}$?

$\frac{2}{33}$	$\frac{6}{11}$	$\frac{3}{14}$	$\frac{3}{33}$	$\frac{2}{14}$
A	**B**	**C**	**D**	**E**

2.

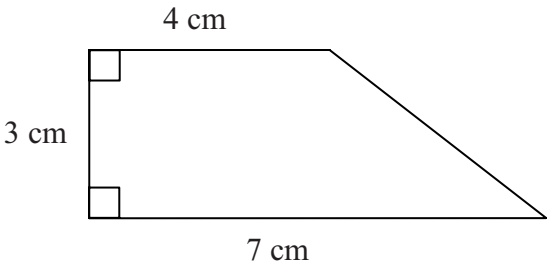


Diagram **NOT** accurately drawn

The area of this shape is

14 cm^2	18.5 cm^2	21 cm^2	16.5 cm^2	84 cm^2
A	**B**	**C**	**D**	**E**

3. Simplify $6p + 4q - 3p - 5q$

$9p + 9q$	$3p - q$	$9p + q$	$3p + q$	$3p + 9q$
A	**B**	**C**	**D**	**E**

4. Factorise $8d - 2$

$6d$	$2d(4d - 1)$	$2(4d - 2)$	$2(4d + 1)$	$2(4d - 1)$
A	**B**	**C**	**D**	**E**

5. A train ticket to the city centre costs £2.85
A teacher buys 26 of these tickets for a school group.
What is the total cost of the 26 tickets?

£74.10	£22.80	£64.10	£51.40	£71.25
A	**B**	**C**	**D**	**E**

6.

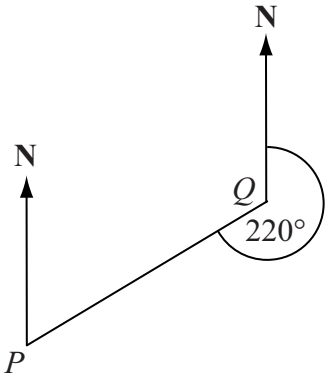


Diagram **NOT** accurately drawn

The bearing of P from Q is 220°

What is the bearing of Q from P?

140°	130°	040°	050°	060°
A	**B**	**C**	**D**	**E**

7. Here are the first five terms of an arithmetic sequence.

9 13 17 21 25

What is the expression, in terms of n, for the nth term of the sequence?

$4n + 1$	$4n$	$4n + 5$	$n + 4$	$n - 4$
A	**B**	**C**	**D**	**E**

8. The Lowest Common Multiple (LCM) of 8 and 12 is

4	96	12	24	2
A	**B**	**C**	**D**	**E**

9. A train travelled 120 km in $1\frac{1}{2}$ hours.

What was the average speed of the train?

100 km/h	80 km/h	60 km/h	120 km/h	180 km/h
A	**B**	**C**	**D**	**E**

10. $(x + 4)(x + 6) =$

$x^2 + 10x + 24$	$2x + 10$	$x^2 + 10x + 10$	$x^2 + 2x + 24$	$x^2 + 24$
A	**B**	**C**	**D**	**E**

11. A cuboid is shown on a 3-D grid.

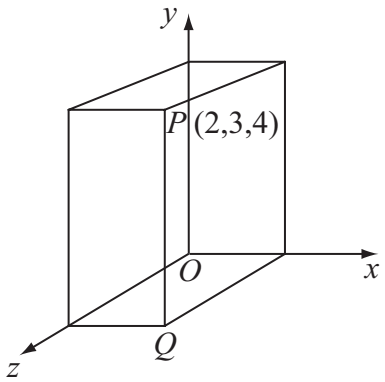


Diagram **NOT** accurately drawn

The point P has the coordinates (2, 3, 4).

The coordinates of the point Q are

(2, 3, 0)	(0, 3, 4)	(0, 0, 4)	(2, 0, 0)	(2, 0, 4)
A	**B**	**C**	**D**	**E**

12. What is 180 written as a product of its prime factors?

$2^4 \times 3 \times 5$	$2 \times 2 \times 3 \times 5 \times 5$	$20 \times 3 \times 3$	$2 \times 2 \times 5 \times 9$	$2 \times 2 \times 3 \times 3 \times 5$
A	**B**	**C**	**D**	**E**

13. What is $1\frac{3}{4} + \frac{2}{3}$ written as a mixed number?

$1\frac{17}{12}$	$1\frac{5}{7}$	$1\frac{5}{12}$	$2\frac{5}{12}$	$\frac{29}{12}$
A	**B**	**C**	**D**	**E**

14. The diagram shows a solid cuboid which is 5 cm by 4 cm by 3 cm.

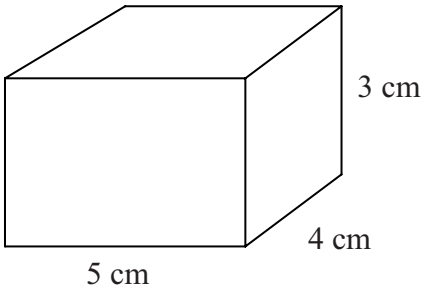


Diagram **NOT** accurately drawn

What is the total surface area of this cuboid?

74 cm^2	48 cm^2	60 cm^2	47 cm^2	94 cm^2
A	**B**	**C**	**D**	**E**

15.

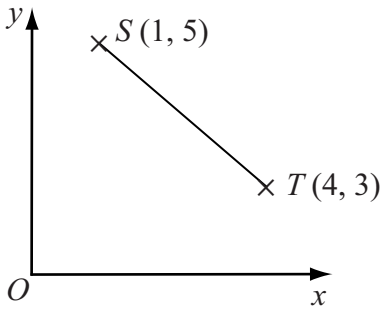


Diagram **NOT** accurately drawn

What are the coordinates of the midpoint of the line segment *ST*?

(2½, 4)	(2½, 5)	(3, 2)	(2, 4)	(1½, 1)
A	**B**	**C**	**D**	**E**

16. Factorise $x^2 - 8x + 15$

$(x-4)(x+2)$	$(x-15)(x+1)$	$(x-3)(x+5)$	$(x+3)(x-5)$	$(x-3)(x-5)$
A	**B**	**C**	**D**	**E**

17. The Highest Common Factor (HCF) of 42 and 72 is

6	7	12	3	504
A	**B**	**C**	**D**	**E**

18. Jomo takes 35 seconds, to the nearest second, to run a race.

What is the least possible time this could be?

35.5 seconds	34.4 seconds	34.5 seconds	34 seconds	34.9 seconds
A	**B**	**C**	**D**	**E**

19. Factorise completely $10x^2 + 6xy$

$2(5x^2+3xy)$	$2x(5+3y)$	$5x(2x+3y)$	$2x(5x+3y)$	$x(10x+6y)$
A	**B**	**C**	**D**	**E**

20. What is 0.00457 in standard form?

457×10^3	4.57×10^3	457×10^{-3}	4.57×10^{-3}	4.57×10^{-2}
A	**B**	**C**	**D**	**E**

21. $(2x+y)(3x-2y) =$

$6x^2+xy-2y^2$	$6x^2-xy-2y$	$6x^2-xy-2y^2$	$6x-xy-2y^2$	$6x^2+7x-2y^2$
A	**B**	**C**	**D**	**E**

22. Expand and simplify $(2e - 5f)^2$

$4e^2-25f^2$	$4e^2-10ef+25f^2$	$4e^2+25f^2$	$4e^2-20ef-25f^2$	$4e^2-20ef+25f^2$
A	**B**	**C**	**D**	**E**

23. The diagram shows a cuboid on a 3-D grid.

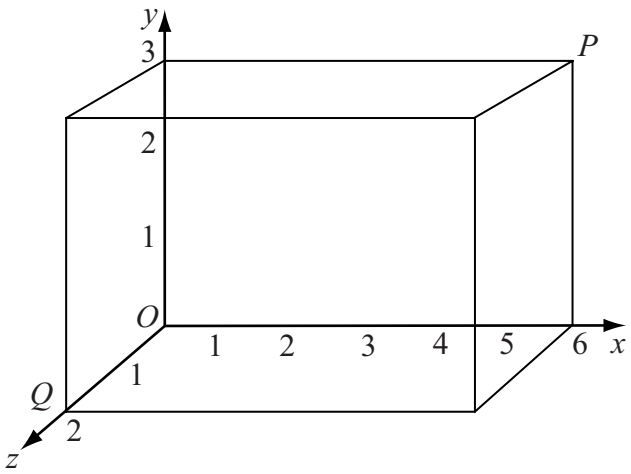


Diagram **NOT** accurately drawn

P and *Q* are two vertices of the cuboid.

Which are the coordinates of the midpoint of the line segment *PQ*?

(6,3,2)	(6,1½,1)	(3,3,2)	(3,3,1)	(3,1½,1)
A	**B**	**C**	**D**	**E**

24. Factorise $12x^2 - 7x - 10$

$(3x-2)(4x-5)$	$(3x-2)(4x+5)$	$(6x+5)(2x-2)$	$(6x-5)(2x+2)$	$(3x+2)(4x-5)$
A	**B**	**C**	**D**	**E**

25. There are 960 litres of water in a tank.
A workman empties the tank.
The water flows out of the tank at a constant rate of 0.4 litres per second.

How long, in **minutes**, does it take the workman to empty the tank completely?

40	96	384	960	2400
A	**B**	**C**	**D**	**E**

TOTAL FOR PAPER: 25 MARKS

END

BLANK PAGE