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 13 November 2008 – Afternoon

Time: 30 minutes

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

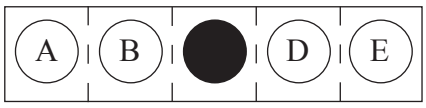
Items included with question papers
Nil

Instructions to Candidates

Use an 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.

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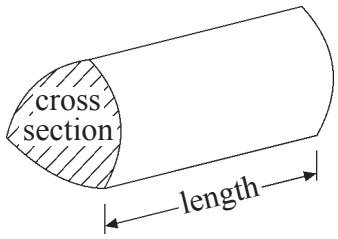
GCSE Mathematics

Formulae: Higher Tier

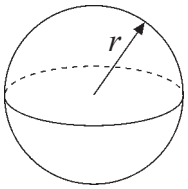
You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Volume of a prism = area of cross section × length



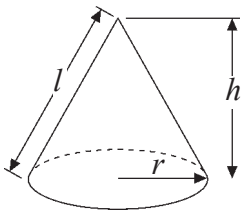
Volume of sphere $= \frac{4}{3}\pi r^3$

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

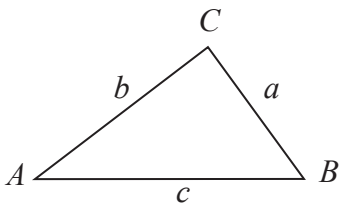


Volume of cone $= \frac{1}{3}\pi r^2 h$

Curved surface area of cone $= \pi rl$



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. Seamus travelled 120 miles in 3 hours.

What was his average speed in miles per hour (mph)?

360 mph	40 mph	36 mph	4 mph	30 mph
A	**B**	**C**	**D**	**E**

2.

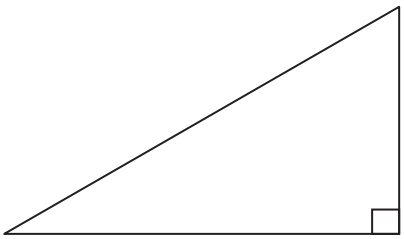


Diagram **NOT** accurately drawn

What is the area of this triangle?

60 cm^2	15 cm^2	30 cm^2	16 cm^2	8 cm^2
A	**B**	**C**	**D**	**E**

---

3. Which is the best estimate for the value of $\frac{37.9 \times 50.2}{2.1 + 2.98}$?

38	40	400	4000	1003
A	**B**	**C**	**D**	**E**

---

4. Sweets cost 5 pence each.
Shamonti buys x sweets.

What is the expression, in terms of x, for the total cost?

x	$\frac{x}{5}$	$x + 5$	$\frac{5}{x}$	$5x$
A	**B**	**C**	**D**	**E**

---

5. What is $2a + 5b + 3a - 2b$ written in its simplest form?

$5a + 7b$	$12ab$	$8ab$	$5a - 3b$	$5a + 3b$
A	**B**	**C**	**D**	**E**

---

6. What is the Lowest Common Multiple (LCM) of 20 and 35?

700	70	350	140	5
A	**B**	**C**	**D**	**E**

---

7. Given that $4.5 \times 5.5 = 24.75$

What is the value of 0.45×550?

0.2475	2.475	24.75	247.5	2475
A	**B**	**C**	**D**	**E**

---

8. Factorise $x^2 - 4x$

$x(x - 4x)$	$x(x - 4)$	$x(x^2 - 4x)$	$(x + 2)(x - 2)$	$2(x - 2)$
A	**B**	**C**	**D**	**E**

---

9. $(x + 3)(x + 4) =$

$x^2 - 7x + 7$	$x^2 + 12$	$2x + 7$	$x^2 + 7x + 12$	$x^2 + 7x + 7$
A	**B**	**C**	**D**	**E**

---

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

2 9 16 23 30

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

$7n + 2$	$7n - 5$	$n + 7$	$7n$	$n - 5$
A	**B**	**C**	**D**	**E**

---

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

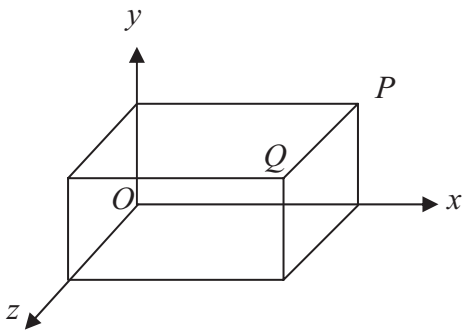


Diagram **NOT** accurately drawn

The point Q has coordinates (3, 1, 2).

The coordinates of the point P are

(3, 1, 0)	(3, 0, 2)	(0, 1, 2)	(3, 2, 0)	(2, 1, 3)
A	**B**	**C**	**D**	**E**

---

12. R is the point with coordinates (4, 1)
S is the point with coordinates (6, 5)

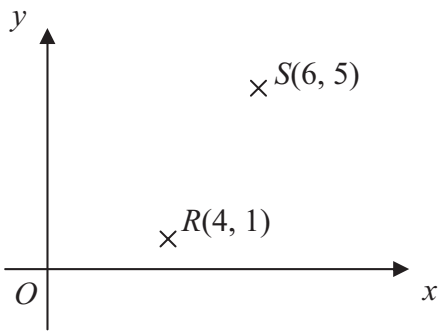


Diagram **NOT** accurately drawn

Which are the coordinates of the midpoint of the line RS?

(1, –3)	(10, 6)	(2, 4)	(5, 3)	(1, 2)
A	**B**	**C**	**D**	**E**

---

13. Expand $2(3x + 4)$

$6x + 4$	$5x + 6$	$14x$	$5x + 8$	$6x + 8$
A	**B**	**C**	**D**	**E**

---

14. What is 2.31×10^4 as an ordinary number?

2.310000	2 310 000	2310	23 100	0.000231
A	**B**	**C**	**D**	**E**

---

15. Here is a cuboid.

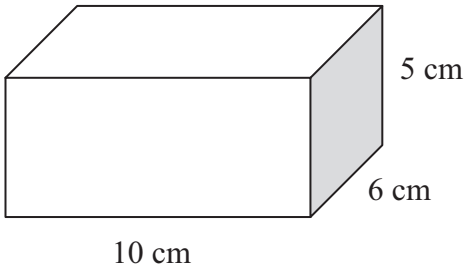


Diagram **NOT** accurately drawn

What is the total surface area of the cuboid?

120 cm^2	280 cm^2	140 cm^2	600 cm^2	300 cm^2
A	**B**	**C**	**D**	**E**

16.

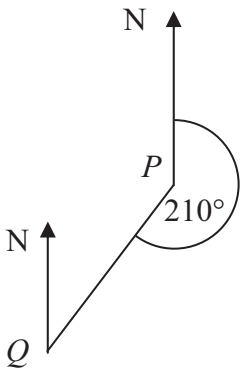


Diagram **NOT** accurately drawn

The bearing of Q from P is 210°

What is the bearing of P from Q?

040°	150°	030°	50°	060°
A	**B**	**C**	**D**	**E**

---

17. Work out $\frac{2}{3} \div \frac{5}{6}$

$\frac{4}{5}$	$\frac{7}{9}$	$\frac{10}{18}$	$\frac{15}{12}$	$\frac{18}{10}$
A	**B**	**C**	**D**	**E**

---

18. Factorise completely $6x^2 - 9xy$

$x(6x - 9y)$	$3(2x^2 - 3xy)$	$3x(2 - 3y)$	$3x(2x - 3y)$	$3x(2x - 9y)$
A	**B**	**C**	**D**	**E**

---

19. What is 0.00362 in standard form?

3.62	3.62×10^{-2}	3.62×10^{-4}	3.62×10^{3}	3.62×10^{-3}
A	**B**	**C**	**D**	**E**

---

20. $(2x - 7)(x - 3) =$

$2x^2 - 13x + 21$	$2x^2 + 21$	$2x^2 - 21$	$2x^2 + 13x + 21$	$2x^2 + 4x + 21$
A	**B**	**C**	**D**	**E**

---

21. Water flows from a container at a constant rate of 0.1 litres per second.

How long does it take to fill a can with 9 litres of water?

9 seconds	90 seconds	9 minutes	10 seconds	90 minutes
A	**B**	**C**	**D**	**E**

---

22. One of the factors of $3x^2 - 13x - 10$ is $(x - 5)$

What is the other factor?

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

---

23. The length of a piece of string is 16 cm, correct to the nearest cm.

What is the greatest possible length the piece of string could be?

15.95	15.5	16.05	16.4	16.5
A	**B**	**C**	**D**	**E**

---

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

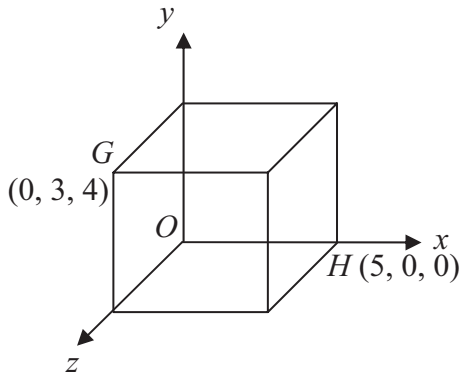


Diagram **NOT** accurately drawn

The point G has coordinates (0, 3, 4)
The point H has coordinates (5, 0, 0)

Which are the coordinates of the midpoint of the line segment GH?

(5, 3, 4)	$(2\frac{1}{2}, 3, 4)$	$(2\frac{1}{2}, 1\frac{1}{2}, 2)$	(10, 6, 8)	$(5, 1\frac{1}{2}, 2)$
A	**B**	**C**	**D**	**E**

---

25. Expand and simplify $(2x-5)^2$

$100x^2$	$4x^2-25$	$4x^2+25$	$4x^2-20x+25$	$4x^2+20x+25$
A	**B**	**C**	**D**	**E**

TOTAL FOR PAPER: 25 MARKS

END