EDEXCEL GCSE MATHEMATICS (MODULAR 2381)

MATHS



EXAM QUESTION PACK

UNIT 2 STAGE 1 (PAPER 8) HIGHER TIER 5382H PAPERS

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Paper Reference(s)

5382H/08

Edexcel GCSE

Mathematics (Modular) – 2381

Paper 8 (Non-Calculator)



Higher Tier

Unit 2 Stage 1

Thursday 17 November 2011 – Afternoon

Time: 30 minutes

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

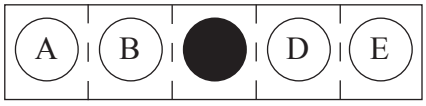
Items included with question papers
Nil

Instructions to Candidates

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Answer **all** the questions.
Do any necessary calculations and rough work in this booklet. **Calculators must not be used.**
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Information for Candidates

There are 25 questions in this question paper. The total mark for this paper is 25.
There are 12 pages in this question paper. Any blank pages are indicated.

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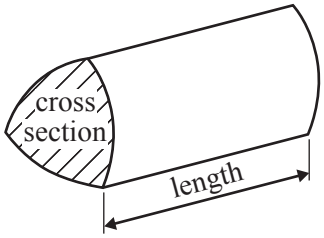
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GCSE Mathematics 2381

Formulae: Higher Tier

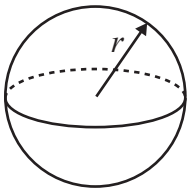
You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Volume of a prism = area of cross section × length



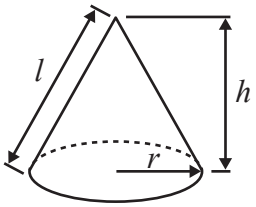
Volume of sphere $= \frac{4}{3}\pi r^3$

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

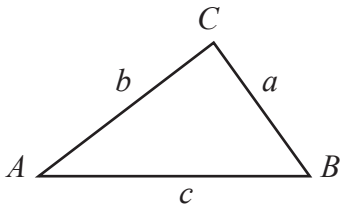


Volume of cone $= \frac{1}{3}\pi r^2 h$

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

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

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Answer ALL TWENTY FIVE questions using the answer sheet.

You must NOT use a calculator.

1. What are the coordinates of the midpoint of the line joining (4, 6) to (8, 9)?

(12, 15)	(4, 3)	$(6, 7\frac{1}{2})$	$(2, 1\frac{1}{2})$	$(7\frac{1}{2}, 6)$
A	**B**	**C**	**D**	**E**

2.

Cinema tickets	
Adult	£7.50
Child	£3.50
Family (2 adults and 2 children)	£19.50

Sunil wants to buy cinema tickets for 4 adults and 4 children.

It is cheaper for him to buy family tickets.
How much cheaper?

£2.50	£8.50	£5	£17	£6
A	**B**	**C**	**D**	**E**

---

3. What is 90 written as a product of its prime factors?

2 + 3 + 3 + 5	3 × 3 × 10	9 × 10	2 × 3 × 3 × 5	2, 3, 3, 5
A	**B**	**C**	**D**	**E**

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4.

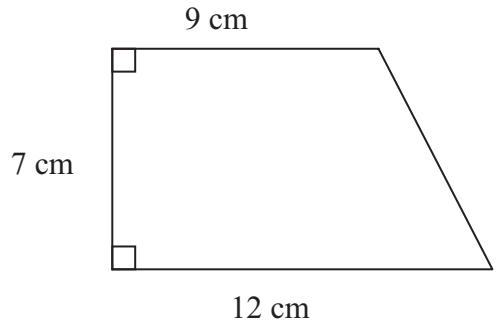


Diagram **NOT** accurately drawn

What is the area of this shape?

$84\ cm^2$	$73.5\ cm^2$	$28\ cm^2$	$108\ cm^2$	$756\ cm^2$
A	**B**	**C**	**D**	**E**

---

5. £3.16 × 54 =

£170.64	£28.44	£160.64	£29.44	£150.00
A	**B**	**C**	**D**	**E**

---

6. Simplify $6m + 2p + 3m - 8p$

$9m - 6p$	$9m + 10p$	$3mp$	$9m + 6p$	$19mp$
A	**B**	**C**	**D**	**E**

---

7. Here are the first 5 terms of an arithmetic sequence.

9 15 21 27 33

Which is the expression for the nth term of the sequence?

$n + 6$	$3n + 6$	$6n$	$6n - 3$	$6n + 3$
A	**B**	**C**	**D**	**E**

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8. Factorise $y^2 - 5y$

$3y$	$y(y - 5y)$	$y^2(y - 5)$	$y(y - 5)$	$3y^3$
A	**B**	**C**	**D**	**E**

---

9. What is the Lowest Common Multiple (LCM) of 24 and 30?

6	720	2	240	120
A	**B**	**C**	**D**	**E**

---

10. $\frac{7}{12} \div \frac{14}{15} =$

$\frac{5}{8}$	$\frac{8}{5}$	$\frac{6}{8}$	$\frac{5}{6}$	$\frac{49}{90}$
A	**B**	**C**	**D**	**E**

---

11. The length of a path is 8 metres correct to the nearest metre.

What is the greatest possible length of the path?

8.9 m	7.5 m	8.5 m	8.05 m	8.45 m
A	**B**	**C**	**D**	**E**

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12. Expand and simplify $4(3x - 2y) - 2(x - 3y)$

$10x - 14y$	$14x + 14y$	$10x - 2y$	$10x - 5y$	$10x + y$
A	**B**	**C**	**D**	**E**

---

13. The diagram shows a solid cuboid.

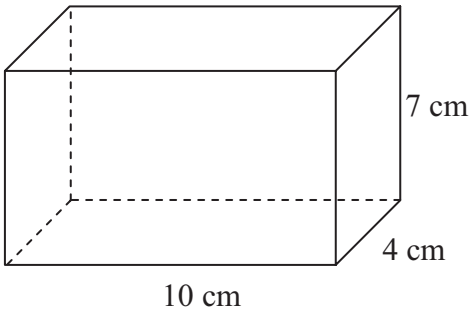


Diagram **NOT** accurately drawn

What is the total **surface area** of the cuboid?

276 cm^2	196 cm^2	236 cm^2	138 cm^2	280 cm^2
A	**B**	**C**	**D**	**E**

14.

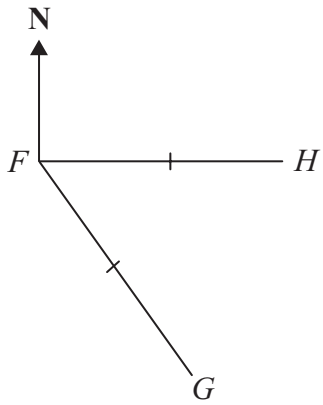


Diagram **NOT** accurately drawn

F, G and H are 3 points.
$FH = FG$.
H is due East of F.
The bearing of G from F is 140°.
Work out the bearing of G from H.

065°	230°	205°	140°	155°
A	**B**	**C**	**D**	**E**

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15. Expand and simplify $(x + 8)(x - 2)$

$x^2 - 16$	$x^2 + 6x - 16$	$x^2 + 10x - 16$	$x^2 + 6x + 16$	$x^2 + 10x + 16$
A	**B**	**C**	**D**	**E**

---

16. What is 408 000 when written in standard form?

408×10^3	4.08×10^{-5}	4×10^5	4.08×10^5	40.8×10^4
A	**B**	**C**	**D**	**E**

---

17. Factorise completely $18x^2y^3 + 12x^3y^3$

$6(3x^2y^3 + 2x^3y^3)$	$6x^2y^3(3 + 2x)$	$6xy(3xy^2 + 2x^2y^2)$	$2x^2y^3(9 + 6x)$	$3x^2y^3(6 + 4x)$
A	**B**	**C**	**D**	**E**

---

18. One of the following statements is false.
Which statement?

A A square is a special type of trapezium.

B A rhombus is a special type of parallelogram.

C A parallelogram is a special type of trapezium.

D A rectangle is a special type of kite.

E A rectangle is a special type of parallelogram.

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19. Write 3.7×10^{-2} as an ordinary number.

3700	0.0037	370	372	0.037
A	**B**	**C**	**D**	**E**

---

20. $(5x - 3)^2 =$

$10x^2 - 30x + 9$	$25x^2 + 9$	$25x^2 - 15x + 9$	$25x^2 - 9$	$25x^2 - 30x + 9$
A	**B**	**C**	**D**	**E**

---

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

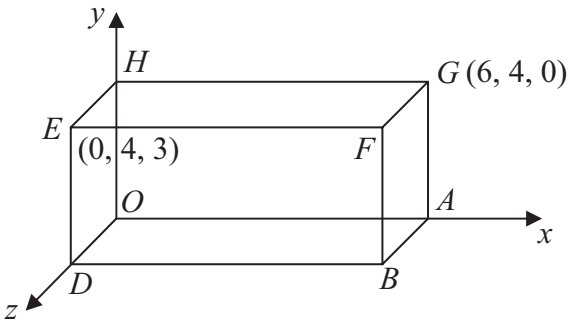


Diagram **NOT** accurately drawn

$G = (6, 4, 0)$
$E = (0, 4, 3)$

What is the area of the face $EFGH$?

12	288	24	72	18
A	**B**	**C**	**D**	**E**

---

22. $(4x - 5)(2x + 7) =$

$8x^2 + 18x - 35$	$8x^2 - 18x + 35$	$8x^2 - 35$	$8x^2 + 9x - 35$	$26x - 35$
A	**B**	**C**	**D**	**E**

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23. Factorise $49a^2 - 25b^2$

$(49a - b)(a + 25b)$	$(7a - 25b)(7a + b)$	$(7a - 5b)^2$
A	**B**	**C**
$(7a - 5b)(7a + 5b)$	$(a + 5b)(49a - 5b)$	
D	**E**	

---

24. One of the factors of $5x^2 + 17x - 12$ is

$5x + 3$	$x + 3$	$5x - 3$	$x - 4$	$5x - 4$
A	**B**	**C**	**D**	**E**

---

25. Kerry travels for $2\frac{1}{2}$ hours at an average speed of 80 km/h.

She stops for 40 minutes.

She then travels 160 km at an average speed of 120 km/h.

Work out Kerry's average speed for her whole journey.

75 km/h	80 km/h	90 km/h	85 km/h	100 km/h
A	**B**	**C**	**D**	**E**

TOTAL FOR PAPER: 25 MARKS

END

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Mark Scheme (Results)

November 2011

GCSE Mathematics (2381)
Paper 5382H_08 (Calculator)

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Question	1	2	3	4	5	6	7	8	9
Answer	C	C	D	B	A	A	E	D	E
Question	10	11	12	13	14	15	16	17	18
Answer	A	C	C	A	C	B	D	B	D
Question	19	20	21	22	23	24	25		
Answer	E	E	E	A	D	C	B		

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Paper Reference(s)

5382H/08

Edexcel GCSE

Mathematics (Modular) – 2381

Paper 8 (Non-Calculator)



Higher Tier

Unit 2 Stage 1

Monday 13 June 2011 – Afternoon

Time: 30 minutes

Materials required for examination
Multiple Choice Answer Sheet
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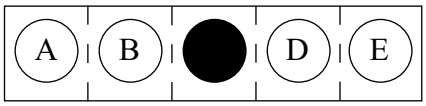
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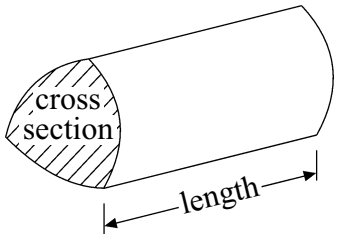
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GCSE Mathematics 2381

Formulae: Higher Tier

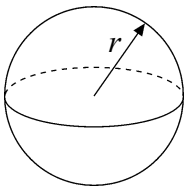
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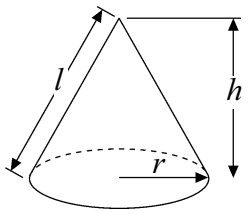
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Surface area of sphere $= 4\pi r^2$

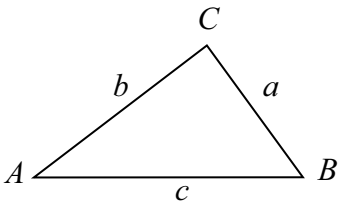


Volume of cone $= \frac{1}{3}\pi r^2 h$

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

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

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Answer ALL TWENTY FIVE questions using the answer sheet.

You must NOT use a calculator.

1. $2(x - 2y) + 4x - y =$

$6x - 5y$	$6x - 3y$	$10x - 6y$	$-2x + 5y$	$6x - 4$
A	**B**	**C**	**D**	**E**

---

2. The nth term of a sequence is $5n - 2$

What is the difference between the 4th term and the 44th term of this sequence?

40	198	200	180	218
A	**B**	**C**	**D**	**E**

---

3. What is 289.625 written correct to 2 significant figures?

29	289.63	300	289.62	290
A	**B**	**C**	**D**	**E**

---

4. What is the Lowest Common Multiple (LCM) of 3, 5 and 6?

3	60	30	90	1
A	**B**	**C**	**D**	**E**

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5. Here is a solid cuboid.

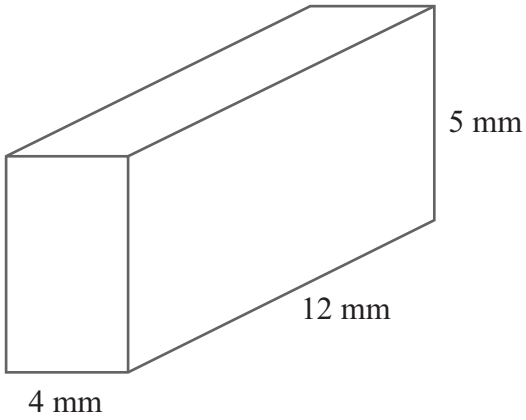


Diagram **NOT** accurately drawn

What is the total surface area of the cuboid?

240 mm^2	84 mm^2	128 mm^2	256 mm^2	120 mm^2
A	**B**	**C**	**D**	**E**

---

6. $8 - 3(x - 2) =$

$5(x - 2)$	$2 - 3x$	$5x - 10$	$14 - 3x$	$2 + 3x$
A	**B**	**C**	**D**	**E**

---

7. Which is the best estimate for the value of $\dfrac{3.95 \times 11.2}{0.53}$?

40	800	20	80	400
A	**B**	**C**	**D**	**E**

---

8. Fiona is x years old.
Duncan is 5 years younger than Fiona.
Sally is half Duncan's age.

What is the expression for Sally's age?

$x - 5$	$2(x - 5)$	$\dfrac{5x}{2}$	$\dfrac{x-5}{2}$	$2(x + 5)$
A	**B**	**C**	**D**	**E**

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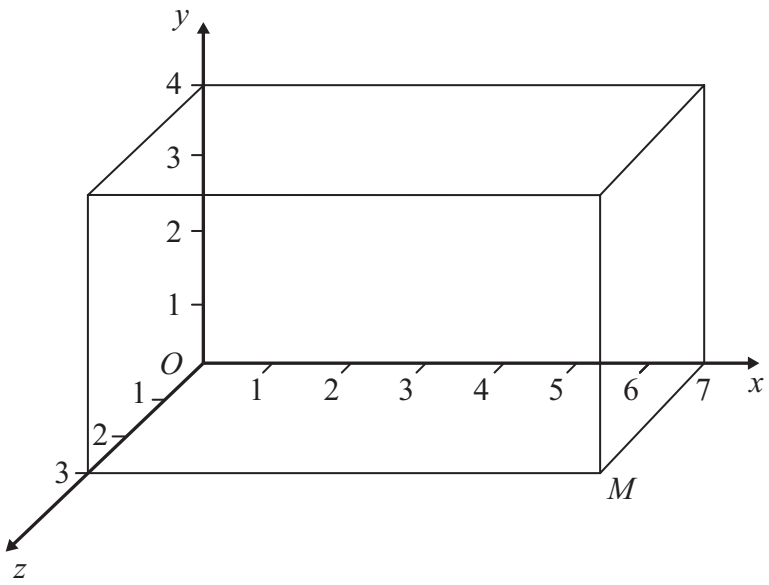
9. Given that $2.8 \times 14.5 = 40.6$

$406 \div 0.28 =$

14500	145000	14.5	145	1450
A	**B**	**C**	**D**	**E**

---

10. Here is a cuboid drawn on a 3-D grid.
The point M is a vertex of the cuboid.



What are the coordinates of the point M?

(3, 0, 7)	(7, 3, 0)	(0, 7, 4)	(4, 3, 7)	(7, 0, 3)
A	**B**	**C**	**D**	**E**

---

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

2	7	12	17	22

Which is the expression for the nth term of the sequence?

$n - 3$	$5n + 3$	$n + 5$	$5n - 3$	$5n$
A	**B**	**C**	**D**	**E**

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12. Factorise $6n - 10$

$6(n - 10)$	$2(3n - 10)$	$2(3n - 5)$	$-4n$	$2(3n + 5)$
A	**B**	**C**	**D**	**E**

13.

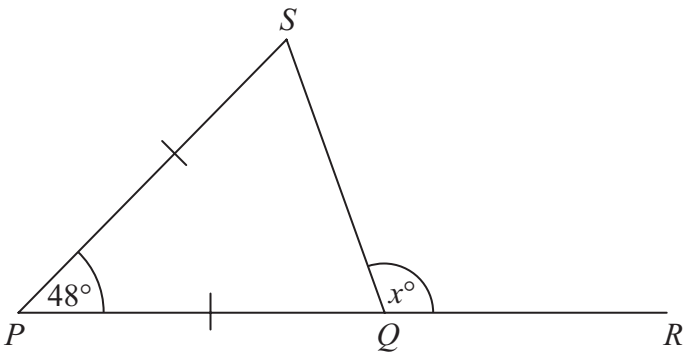


Diagram **NOT** accurately drawn

PQR is a straight line.
SPQ is an isosceles triangle.
Angle *SPQ* = 48°.

What is the value of *x*?

72	114	48	66	132
A	**B**	**C**	**D**	**E**

---

14. What are the coordinates of the midpoint of the line joining $P(0, 2, 5)$ to $Q(4, 2, -1)$?

(4, 4, 4)	(2, 2, 2)	(2, 2, 3)	(2, 0, 6)	(4, 0, 6)
A	**B**	**C**	**D**	**E**

---

15. $(y + 5)(y - 4) =$

$y^2 + y - 9$	$y^2 - y - 20$	$y^2 + y + 1$	$y^2 + y - 20$	$y^2 - y - 1$
A	**B**	**C**	**D**	**E**

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16. What is 3.61×10^{-4} when written as an ordinary number?

36100	0.0004	0.000361	3610	0.0000361
A	**B**	**C**	**D**	**E**

---

17. $1\frac{1}{2} \div 2\frac{1}{4} =$

$2\frac{3}{4}$	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{2}{3}$	$2\frac{1}{2}$
A	**B**	**C**	**D**	**E**

---

18. Factorise completely $4p^2q + 6pq^2$

$4pq(p + q)$	$pq(4p + 6q)$	$2p(2p + 3q^2)$	$2pq^2(2p + 3q)$	$2pq(2p + 3q)$
A	**B**	**C**	**D**	**E**

---

19. Emma drives at an average speed of 54 km per hour.
What is Emma's average speed in metres per second?

900	1.5	90	15	20
A	**B**	**C**	**D**	**E**

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20. Factorise completely $4x^2 - 100y^2$

A	B	C	D	E
$(2x + 10y)(2x - 10y)$	$2(x + 5y)(x - 5y)$	$4(x + 5y)(x - 5y)$	$(2x - 10y)(2x - 10y)$	$4(x - 5y)(x - 5y)$

---

21. $(3m - 2)^2 =$

A	B	C	D	E
$9m^2 - 12m + 4$	$9m^2 - 4$	$9m^2 + 4$	$9m^2 - 12m - 4$	$9m^2 + 12m + 4$

---

22. What is 48 500 000 when written in standard form?

A	B	C	D	E
4.8×10^7	4.85×10^{-7}	48.5×10^6	4.85×10^7	4.85×10^5

---

23. One of these expressions is a factor of $10x^2 - 9x + 2$
Which expression?

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

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24. When full, a tank holds 92 litres of oil.
The tank is half full.
Ken fills the tank at a rate of 0.4 litres per second.

How long does it take Ken to fill the tank?

18.4 s	1 min 55 s	105 s	1 min 15 s	3 min 50 s
A	**B**	**C**	**D**	**E**

25.

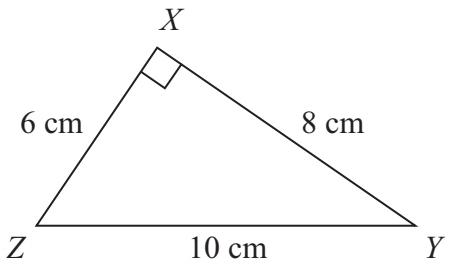


Diagram **NOT** accurately drawn

XYZ is a right-angle triangle.
XY = 8 cm.
XZ = 6 cm.
ZY = 10 cm.
Angle *X* = 90°.

What is the length of the perpendicular distance of *X* from *ZY*?

4.8 cm	6 cm	5 cm	2.4 cm	8 cm
A	**B**	**C**	**D**	**E**

TOTAL FOR PAPER: 25 MARKS

END

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Mark Scheme (Results)

June 2011

GCSE Mathematics (5382H)
Paper 08 (Non-Calculator)

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Question	1	2	3	4	5	6	7	8	9
	A	C	E	C	D	D	D	D	E
Question	10	11	12	13	14	15	16	17	18
	E	D	C	B	B	D	C	D	E
Question	19	20	21	22	23	24	25		
	D	C	A	D	B	B	A		

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Edexcel GCSE

Mathematics (Modular) – 2381

Paper 8 (Non-Calculator)



Higher Tier

Unit 2 Stage 1

Tuesday 1 March 2011 – Afternoon

Time: 30 minutes

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

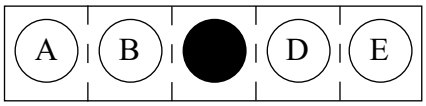
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Use a HB pencil. Do not open this booklet until you are told to do so.

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 12 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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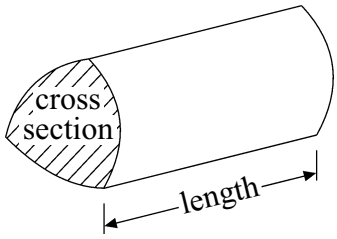
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GCSE Mathematics 2381

Formulae: Higher Tier

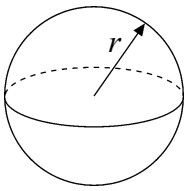
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Volume of a prism = area of cross section × length



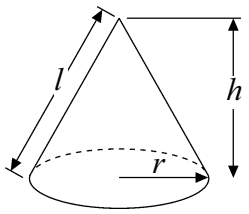
Volume of sphere $= \frac{4}{3}\pi r^3$

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

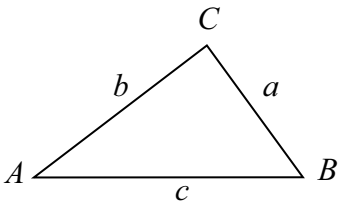


Volume of cone $= \frac{1}{3}\pi r^2 h$

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

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

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Answer ALL TWENTY FIVE questions using the answer sheet.

You must NOT use a calculator.

1. What is 23 760 written correct to **three** significant figures?

23 700	238	237	23 800	23 600
A	**B**	**C**	**D**	**E**

---

2. Jade measured the length of her pencil case as 31 cm correct to the nearest cm.

What is the greatest length her pencil case could be?

31.5 cm	30.5 cm	31.49 cm	31.4 cm	32 cm
A	**B**	**C**	**D**	**E**

---

3. Factorise $y^2 + 8y$

$y(y + 8y)$	$10y$	$y(y + 8)$	$y^2(y + 8)$	$9y^2$
A	**B**	**C**	**D**	**E**

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4. $0.048 \div 0.3 =$

16	1.6	0.16	0.016	0.0016
A	**B**	**C**	**D**	**E**

---

5. There are 6 pens in a box of pens.
There are 12 pencils in a box of pencils.

Ray buys x boxes of pens and y boxes of pencils.

An expression for the total number of pens and pencils that Ray buys is

$12x + 6y$	$6x + 12y$	$x + y$	$18xy$	$18(x + y)$
A	**B**	**C**	**D**	**E**

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6.

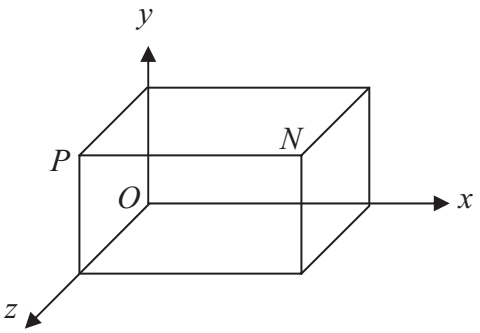


Diagram **NOT** accurately drawn

The point N has coordinates (4, 2, 3).

The coordinates of the point P are

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

---

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

7 11 15 19 23

The nth term of this sequence is

$4n + 7$	$4n + 3$	$n + 4$	$4n$	$n - 4$
A	**B**	**C**	**D**	**E**

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8.

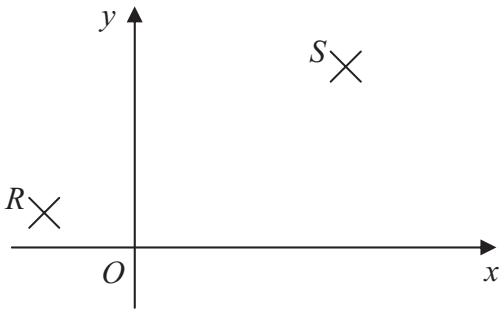


Diagram **NOT** accurately drawn

R is the point (–3, 1).
S is the point (7, 5).

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

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

---

9. The Lowest Common Multiple (LCM) of 24 and 36 is

6	96	144	12	72
A	**B**	**C**	**D**	**E**

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10. Sandy drove 150 miles in 2 hours 30 minutes.

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

65.2 mph	60 mph	37.5 mph	34.5 mph	6 mph
A	**B**	**C**	**D**	**E**

11.

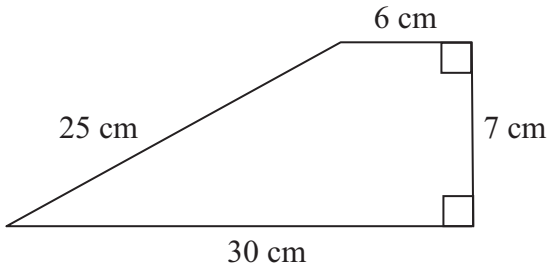


Diagram **NOT** accurately drawn

The area of this shape is

68 cm²	450 cm²	105 cm²	126 cm²	210 cm²
A	**B**	**C**	**D**	**E**

---

12. Which is the **best** estimate for the value of $\dfrac{21.9 \times 5.13}{4.19 - 1.98}$?

50	5	500	75	20
A	**B**	**C**	**D**	**E**

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13. $5a + 3b - a - 6b =$

$4a + 9b$	$8a - 7b$	$15ab$	$4a - 3b$	$5 - 3b$
A	**B**	**C**	**D**	**E**

---

14. Factorise completely $2x^3 - 6x^2$

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

---

15. $(x + 3)(x - 4) =$

$x^2 + 7x - 12$	$x^2 - 12$	$2x - 1$	$x^2 - 7x + 12$	$x^2 - x - 12$
A	**B**	**C**	**D**	**E**

---

16. What is 8.26×10^5 as an ordinary number?

8.26000	82 600 000	82 600	826 000	0.0000826
A	**B**	**C**	**D**	**E**

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17. A train travels at a speed of 150 miles per hour.

How long, in seconds, does it take to travel a distance of 1 mile?

2.5	24	25	2.4	90
A	**B**	**C**	**D**	**E**

---

18. What is 0.035 when written in standard form?

$3.5 \times \frac{1}{100}$	3.5×10^{-2}	3.5×10^{-3}	3.5×10^{2}	3.5×10^{-1}
A	**B**	**C**	**D**	**E**

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19.

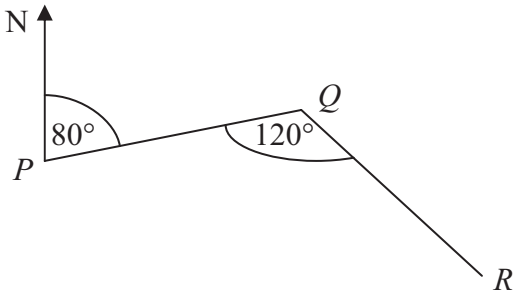


Diagram **NOT** accurately drawn

The bearing of Q from P is 080°
Angle PQR is 120°

What is the bearing of R from Q?

160°	120°	200°	320°	140°
A	**B**	**C**	**D**	**E**

---

20. Work out $3\frac{1}{3} \div 1\frac{1}{5}$

$1\frac{1}{9}$	4	$2\frac{7}{9}$	$\frac{1}{4}$	$\frac{15}{9}$
A	**B**	**C**	**D**	**E**

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

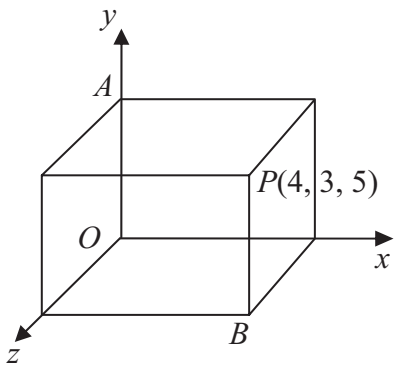


Diagram **NOT** accurately drawn

The point P has coordinates (4, 3, 5)

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

(4, 0, 0)	(0, 3, 5)	(2, 1½, 2½)	(8, 6, 10)	(5, 1½, 2)
A	**B**	**C**	**D**	**E**

---

22. Factorise $2x^2 - 13x + 20$

$(2x - 5)(x + 4)$	$(2x - 4)(x - 5)$	$(2x - 10)(x - 2)$	$(2x + 5)(x - 4)$	$(2x - 5)(x - 4)$
A	**B**	**C**	**D**	**E**

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23. There is 10 m^3 of concrete in a lorry.

The lorry pumps out the concrete at a constant rate.

It takes 3 minutes 20 seconds to pump out all the concrete.

At what rate, in m^3 per second, is the lorry pumping out the concrete?

0.005	2	0.05	0.5	3
A	**B**	**C**	**D**	**E**

---

24. Expand and simplify $(3x-4y)^2$

$49x^2y^2$	$9x^2 - 16y^2$	$9x^2 + 16y^2$	$9x^2 - 24xy + 16y^2$	$9x^2 + 24xy + 16y^2$
A	**B**	**C**	**D**	**E**

---

25. Which of these is a factor of $6x^2 - 13x + 6$?

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

TOTAL FOR PAPER: 25 MARKS

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GCSE

GCSE Mathematics (Modular) - 2381
Paper: 5382H/08

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March 2011 Paper 5382H/08 Mark Scheme

Question	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Answer	D	A	C	C	B	C	B	C	E
Question	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**
Answer	B	D	A	D	A	E	D	B	B
Question	**19**	**20**	**21**	**22**	**23**	**24**	**25**		
Answer	E	C	C	E	C	D	B		

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Mathematics (Modular) – 2381

Paper 8 (Non-Calculator)



Higher Tier

Unit 2 Stage 1

Monday 15 November 2010 – Afternoon

Time: 30 minutes

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

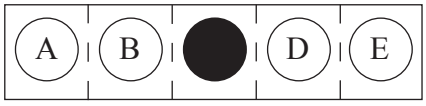
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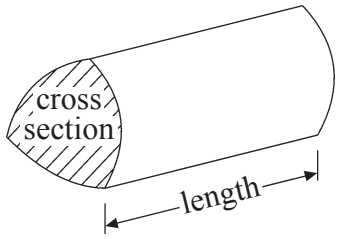
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GCSE Mathematics 2381

Formulae: Higher Tier

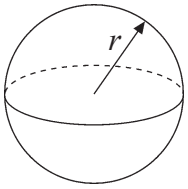
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Volume of a prism = area of cross section × length



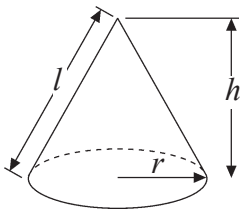
Volume of sphere $= \frac{4}{3}\pi r^3$

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

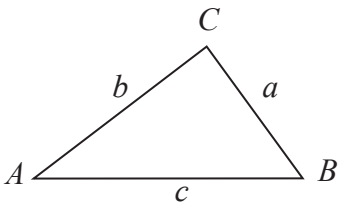


Volume of cone $= \frac{1}{3}\pi r^2 h$

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

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

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Answer ALL TWENTY FIVE questions using the answer sheet.

You must NOT use a calculator.

1. Simplify $7a + 9b + 4a - 6b$

$11a - 3b$	$11a + 15b$	$3a + 3b$	$11a + 3b$	$11a - 15b$
A	**B**	**C**	**D**	**E**

---

2. $56 \times 31.2 = 1747.2$

The value of 560×312 is

174.72	174720	1747200	17.472	17472
A	**B**	**C**	**D**	**E**

---

3. Factorise $12m + 3$

$3(4m + 3)$	$15m$	$3(4m + 1)$	$3(4m - 1)$	$3m(4m + 1)$
A	**B**	**C**	**D**	**E**

4.

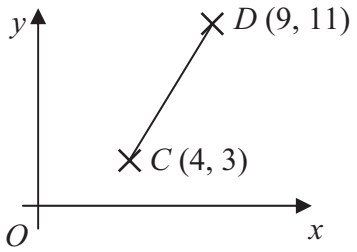


Diagram **NOT** accurately drawn

C is the point (4, 3).
D is the point (9, 11).

The coordinates of the midpoint of CD are

$(7,\ 6\frac{1}{2})$	$(4\frac{1}{2},\ 5\frac{1}{2})$	$(6\frac{1}{2},\ 7)$	(13, 14)	(5, 8)
A	**B**	**C**	**D**	**E**

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5.

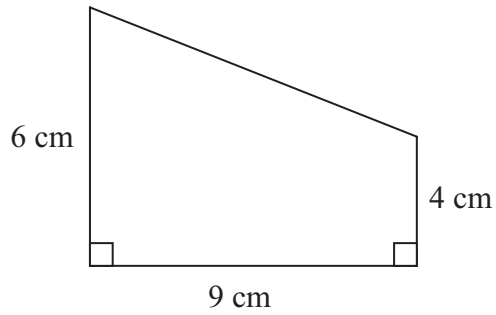


Diagram **NOT** accurately drawn

The area of this shape is

19 cm^2	54 cm^2	90 cm^2	216 cm^2	45 cm^2
A	**B**	**C**	**D**	**E**

---

6. A cinema ticket costs £3.85
A teacher buys 32 of these tickets for a school group.

What is the total cost of the 32 tickets?

£133.20	£123.20	£19.25	£18.25	£113.20
A	**B**	**C**	**D**	**E**

---

7. What is 34 782 when rounded correct to 3 significant figures?

34 800	347	348	34 700	34 780
A	**B**	**C**	**D**	**E**

---

8. The length of a path is 17 m, correct to the nearest metre.

What is the least possible length of the path?

17.5 m	16.6 m	16 m	16.5 m	16.9 m
A	**B**	**C**	**D**	**E**

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9. A cuboid is shown on a 3-D coordinate grid.

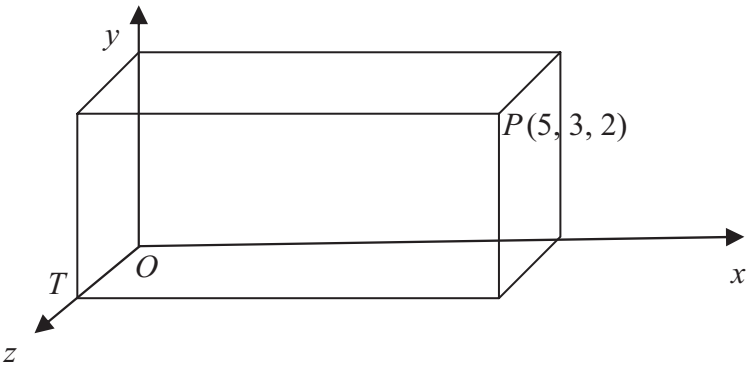


Diagram **NOT** accurately drawn

O, *P* and *T* are vertices of the cuboid.
The point *P* has the coordinates (5, 3, 2).

The coordinates of the point *T* are

(0, 0, 2)	(2, 0, 0)	(0, 3, 0)	(0, 3, 2)	(5, 0, 0)
A	**B**	**C**	**D**	**E**

---

10. $3(2x - 5) + 2(x - 3) =$

$8x - 11$	$8x - 21$	$8x - 9$	$8x - 8$	$8x - 18$
A	**B**	**C**	**D**	**E**

11.

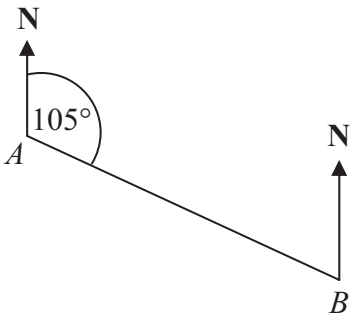


Diagram **NOT** accurately drawn

The bearing of *B* from *A* is 105°

The bearing of *A* from *B* is

255°	105°	285°	015°	075°
A	**B**	**C**	**D**	**E**

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12. What is 60 written as a product of its prime factors?

A	B	C	D	E
2, 2, 3, 5	$2 \times 2 \times 15$	$1 \times 2 \times 2 \times 3 \times 5$	6×10	$2 \times 2 \times 3 \times 5$

---

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

7 10 13 16 19

What is the expression for the nth term of this sequence?

A	B	C	D	E
$3n$	$n + 3$	$5n + 3$	$3n + 5$	$3n + 4$

---

14. The diagram shows a solid cuboid.

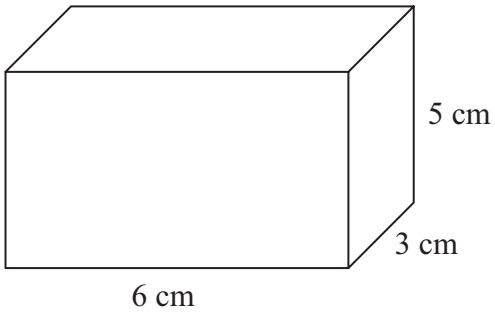


Diagram **NOT** accurately drawn

What is the total surface area of this cuboid?

A	B	C	D	E
66 cm^2	126 cm^2	108 cm^2	90 cm^2	63 cm^2

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15. $(x + 5)(x + 7) =$

$x^2 + 35$	$x^2 + 12x + 12$	$2x + 12$	$x^2 + 2x + 35$	$x^2 + 12x + 35$
A	**B**	**C**	**D**	**E**

---

16. The Lowest Common Multiple (LCM) of 24 and 40 is

960	8	120	240	4
A	**B**	**C**	**D**	**E**

---

17. Factorise $x^2 + 4x - 12$

$(x + 6)(x - 2)$	$(x + 12)(x - 1)$	$(x + 4)(x - 3)$	$(x - 6)(x - 2)$	$(x - 6)(x + 2)$
A	**B**	**C**	**D**	**E**

---

18. What is 0.087 when written in standard form?

8.7×10^2	8.7×10^{-1}	87×10^2	8.7×10^{-2}	87×10^{-3}
A	**B**	**C**	**D**	**E**

---

19. Factorise completely $30x^2y + 12xy^2$

$6xy(5x + 2y)$	$6xy(5x + 2)$	$3xy(10x + 4y)$	$2xy(15x + 6y)$	$6x(5xy + 2y^2)$
A	**B**	**C**	**D**	**E**

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20. $1\frac{3}{4} \times 2\frac{2}{3} =$

$2\frac{1}{2}$	$3\frac{2}{3}$	$4\frac{5}{12}$	$4\frac{1}{2}$	$4\frac{2}{3}$
A	**B**	**C**	**D**	**E**

---

21. Expand and simplify $(3a - 7c)^2$

$9a^2 + 49c^2$	$9a^2 - 42ac - 49c^2$	$9a^2 - 42ac + 49c^2$
A	**B**	**C**

$9a^2 - 49c^2$	$9a^2 - 21ac + 49c^2$
D	**E**

---

22. Factorise $3x^2 - 10x + 8$

$(3x + 4)(x + 2)$	$(3x - 2)(x - 4)$	$(3x + 1)(x + 8)$	$(3x - 4)(x - 2)$	$(3x - 8)(x - 1)$
A	**B**	**C**	**D**	**E**

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

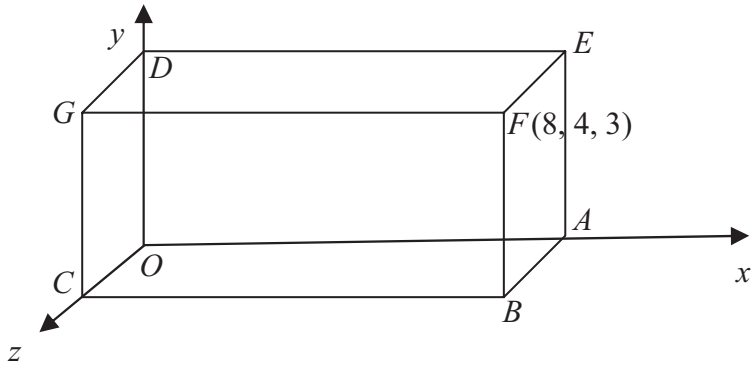


Diagram **NOT** accurately drawn

F has coordinates (8, 4, 3).

What is the area of the face *DEFG*?

14	24	96	32	12
A	**B**	**C**	**D**	**E**

---

24. A factor of $18x^2 - 33x + 5$ is

$(3x - 5)$	$(6x - 5)$	$(6x + 1)$	$(3x + 5)$	$(3x - 1)$
A	**B**	**C**	**D**	**E**

---

25. There are 720 litres of water in a tank.
The water flows out of the tank until the tank is completely empty.
The water flows out of the tank at a constant rate of 0.6 litres per second.

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

1200	432	20	200	120
A	**B**	**C**	**D**	**E**

TOTAL FOR PAPER: 25 MARKS

END

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Mark Scheme (Results)

November 2010

GCSE

GCSE Mathematics (Modular) - 2381
Paper: 5382H/08

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November 2010

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November 2010 Paper 5382H/08 Mark Scheme

Question	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Answer	D	B	C	C	E	B	A	D	A
Question	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**
Answer	B	C	E	E	B	E	C	A	D
Question	**19**	**20**	**21**	**22**	**23**	**24**	**25**		
Answer	A	E	C	D	B	A	C		

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5382H/08

Edexcel GCSE

Mathematics (Modular) – 2381

Paper 8 (Non-Calculator)



Higher Tier

Unit 2 Stage 1

Wednesday 30 June 2010 – Morning

Time: 30 minutes

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

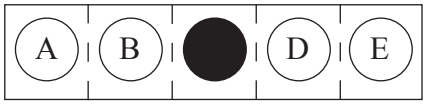
Items included with question papers
Nil

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 12 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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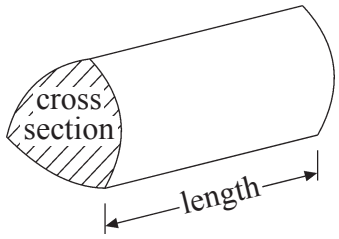
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GCSE Mathematics

Formulae: Higher Tier

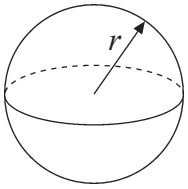
You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Volume of a prism = area of cross section × length



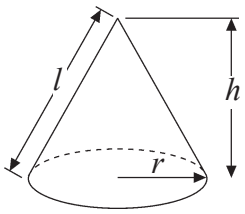
Volume of sphere $= \frac{4}{3}\pi r^3$

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

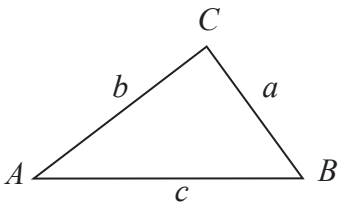


Volume of cone $= \frac{1}{3}\pi r^2 h$

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



In any triangle ABC



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

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

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Answer ALL TWENTY FIVE questions using the answer sheet.

You must NOT use a calculator.

1. $\frac{27}{8} =$

$2\frac{7}{8}$	$\frac{8}{27}$	$3\frac{1}{8}$	$2\frac{3}{8}$	$3\frac{3}{8}$
A	**B**	**C**	**D**	**E**

2.

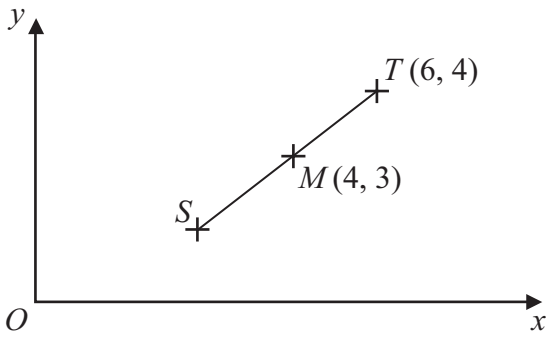


Diagram **NOT** accurately drawn

T is the point (6, 4).
M is the point (4, 3).
M is the midpoint of ST.

Which are the coordinates of the point S ?

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

---

3. Simplify $6x - 2y + x + 5y$

$7x - 7y$	$5x - 7y$	$4x + 6y$	$7x + 3y$	$5x + 3y$
A	**B**	**C**	**D**	**E**

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4. The Highest Common Factor (HCF) of 24 and 40 is

2	8	120	4	960
A	**B**	**C**	**D**	**E**

5. Here are the first five terms of a sequence.

1 3 6 10 15

The next term of this sequence is

20	21	24	18	22
A	**B**	**C**	**D**	**E**

6. n is an odd number.

One of these expressions **always** represents an even number.
Which expression?

$n + 2$	$2n + 1$	$2n - 1$	$n + 1$	$3n$
A	**B**	**C**	**D**	**E**

7. $36.8 \times 1.65 = 60.72$

The value of 3.68×165 is

0.6072	60.72	607.2	6072	60720
A	**B**	**C**	**D**	**E**

8. Factorise $2m + 6$

$2(m + 6)$	$2(m + 3)$	$8m$	$2m + 3$	$m + 3$
A	**B**	**C**	**D**	**E**

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

−2 3 8 13 18

Which is the expression for the nth term of this sequence?

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

10. $\frac{6}{15} \div \frac{9}{10} =$

$\frac{4}{9}$	$\frac{15}{25}$	$\frac{150}{54}$	$\frac{3}{5}$	$\frac{9}{4}$
A	**B**	**C**	**D**	**E**

11.

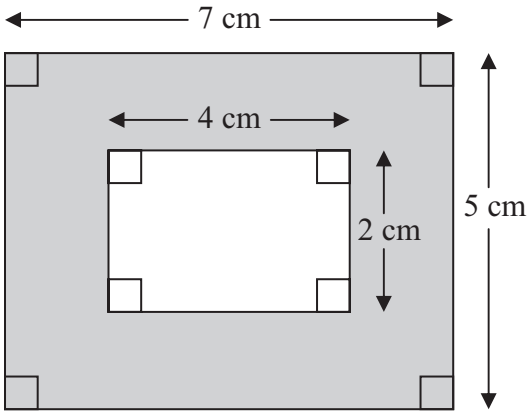


Diagram **NOT** accurately drawn

What is the shaded area?

8 cm^2	27 cm^2	35 cm^2	12 cm^2	43 cm^2
A	**B**	**C**	**D**	**E**

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12.

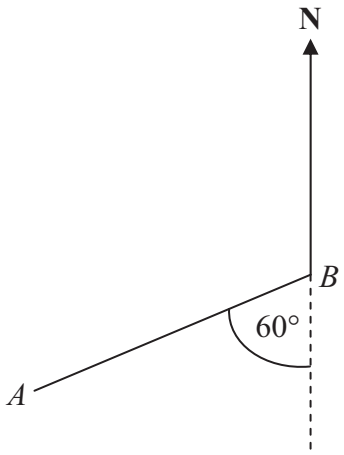


Diagram **NOT** accurately drawn

What is the bearing of A from B?

060°	120°	300°	240°	210°
A	**B**	**C**	**D**	**E**

13. What is 300 when written as a product of its prime factors?

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

14. $2(x - 4) - (x + 3) =$

$x - 5$	$x - 7$	$x - 1$	-14	$x - 11$
A	**B**	**C**	**D**	**E**

15. What is 23.0651 when written correct to 3 significant figures?

23.0	23.065	23.1	23.07	2.31
A	**B**	**C**	**D**	**E**

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16. Factorise completely $4x^2 + 12xy$

$4(x + 3y)$	$2x(2x + 6y)$	$4(x^2 + 3xy)$	$4x(x + 3y)$	$4x(x + 12y)$
A	**B**	**C**	**D**	**E**

17. The diagram shows a solid triangular prism.

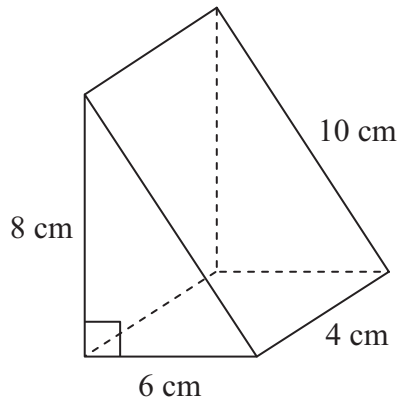


Diagram **NOT** accurately drawn

What is the total surface area of this prism?

$60\ cm^2$	$96\ cm^2$	$104\ cm^2$	$112\ cm^2$	$144\ cm^2$
A	**B**	**C**	**D**	**E**

18. Factorise $y^2 + 9y + 18$

$(y + 2)(y + 9)$	$(y + 1)(y + 18)$	$(y + 1)(y + 8)$	$y(y + 9) + 18$	$(y + 3)(y + 6)$
A	**B**	**C**	**D**	**E**

19. What is 0.00185 when written in standard form?

1.85×10^3	1.85×10^{-2}	1.85×10^{-3}	185×10^{-3}	1.85^{-3}
A	**B**	**C**	**D**	**E**

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20. $(p - 5)^2 =$

$p^2 + 25$	$p^2 - 10p + 25$	$p^2 - 25$	$p^2 - 10p - 25$	$p^2 - 10p + 10$
A	**B**	**C**	**D**	**E**

21. The height of a door is 1.90 metres correct to the nearest centimetre.

What is the **least** possible height of the door?

1.85 m	1.849 m	1.89 m	1.845 m	1.895 m
A	**B**	**C**	**D**	**E**

22. L is the point with coordinates $(0, 3, -4)$.
N is the point with coordinates $(5, -1, -2)$.

What are the coordinates of the midpoint of the line LN?

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

23. Expand $(3c - 4d)(2c + 5d)$

$5c^2 + 7cd - 9d^2$	$6c^2 - 22cd - 20d^2$	$6c^2 + 7cd - 20d^2$	$5c^2 + 7cd - 20d^2$	$6c^2 - 7cd + 20d^2$
A	**B**	**C**	**D**	**E**

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24. A tank is filled with oil at a constant rate.
It takes 1 hour and 20 minutes to fill the tank with 1200 litres of oil.

At what rate, in cm^3 per second, is the tank filled?

15000	250	0.25	166.7	1600
A	**B**	**C**	**D**	**E**

---

25. One of these expressions is a factor of $8x^2 + 2x - 3$
Which expression?

$2x - 1$	$4x - 3$	$x - 3$	$4x - 1$	$2x + 1$
A	**B**	**C**	**D**	**E**

TOTAL FOR PAPER: 25 MARKS

END

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Mark Scheme (Results)

Summer 2010

GCSE

GCSE Mathematics (Modular) - 2381
Paper: 5382H/08

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Summer 2010

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June 2010 Paper 5382H/08 Mark Scheme

Question	Answer
1	E
2	B
3	D
4	B
5	B
6	D
7	C
8	B
9	D
10	A
11	B
12	D
13	E
14	E
15	C
16	D
17	E
18	E
19	C
20	B
21	E
22	B
23	C
24	B
25	A

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5382H/08

Edexcel GCSE

Mathematics (Modular) – 2381

Paper 8 (Non-Calculator)



Higher Tier

Unit 2 Stage 1

Tuesday 2 March 2010 – Afternoon

Time: 30 minutes

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

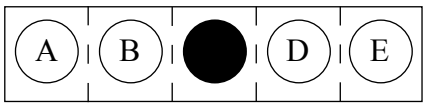
Items included with question papers
Nil

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 16 pages in this question paper. Any blank pages are indicated.

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Return at the end to those you have left out.

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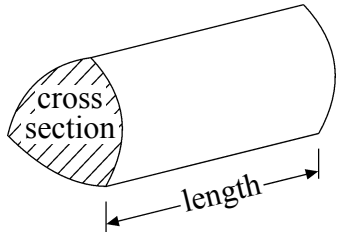
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GCSE Mathematics 2381

Formulae: Higher Tier

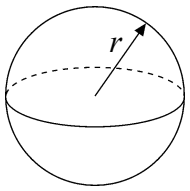
You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Volume of a prism = area of cross section × length



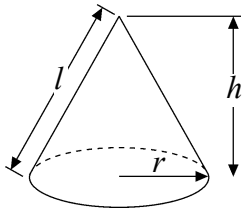
Volume of sphere $= \frac{4}{3}\pi r^3$

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

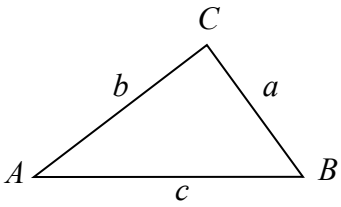


Volume of cone $= \frac{1}{3}\pi r^2 h$

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

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

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Answer ALL TWENTY FIVE questions using the answer sheet.

You must NOT use a calculator.

1.

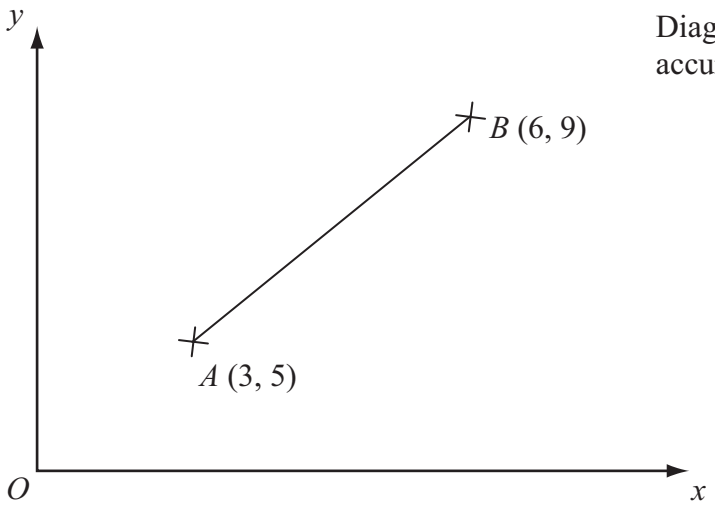


Diagram **NOT** accurately drawn

M is the midpoint of the line AB.

What are the coordinates of M?

(9, 7)	(1.5, 2)	(3, 4)	(9, 14)	(4.5, 7)
A	**B**	**C**	**D**	**E**

---

2. Sam buys x pencils at 12p each and y pens at 20p each.

What is the expression for the total cost in pence?

$x + y$	$12x + y$	$12x20y$	$12x = 20y$	$12x + 20y$
A	**B**	**C**	**D**	**E**

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3. $3a - 4x + a - 3x =$

$4a - 7x$	$2a - 7x$	$4a + 7x$	$2a + 7x$	$4a - x$
A	**B**	**C**	**D**	**E**

4.

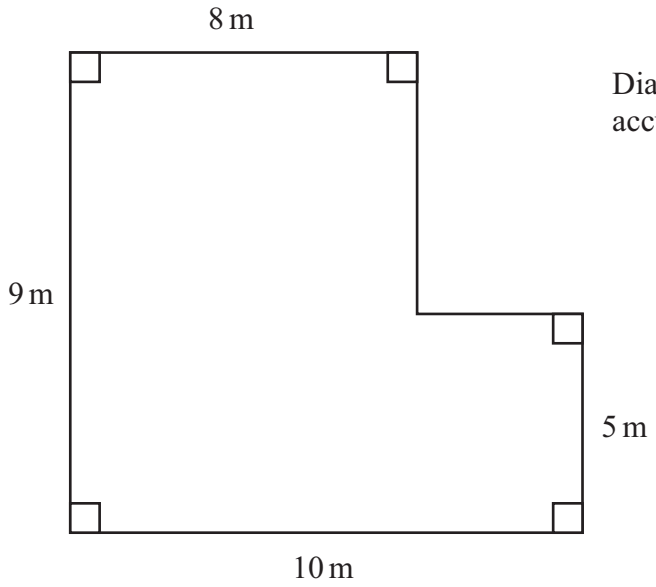


Diagram **NOT** accurately drawn

The area of this shape is

32 m^2	122 m^2	82 m^2	97 m^2	38 m^2
A	**B**	**C**	**D**	**E**

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5. Here are the first 5 terms of an arithmetic sequence.

–3 7 17 27 37

What is the expression for the nth term of this sequence?

$n + 10$	$10n - 3$	$10n - 13$	$-3n + 10$	$n = n + 10$
A	**B**	**C**	**D**	**E**

---

6. $6.4 \div 0.2 =$

0.32	3.2	12.8	32	128
A	**B**	**C**	**D**	**E**

---

7. $2\frac{3}{4} =$

$\frac{23}{4}$	$\frac{7}{4}$	$\frac{11}{4}$	$\frac{10}{4}$	$\frac{5}{4}$
A	**B**	**C**	**D**	**E**

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8. The Highest Common Factor (HCF) of 60 and 96 is

2	12	6	5760	480
A	**B**	**C**	**D**	**E**

---

9. An aeroplane flies at a constant speed of 660 kilometres per hour.

How far does it fly in 2 hours 30 minutes?

264 kilometres	1320 kilometres	1650 kilometres	1350 kilometres	1500 kilometres
A	**B**	**C**	**D**	**E**

---

10. What is 32 800 when written in standard form?

3.3×10^4	3.28×10^4	32.8×10^4	3.28×10^2	328×10^2
A	**B**	**C**	**D**	**E**

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11.

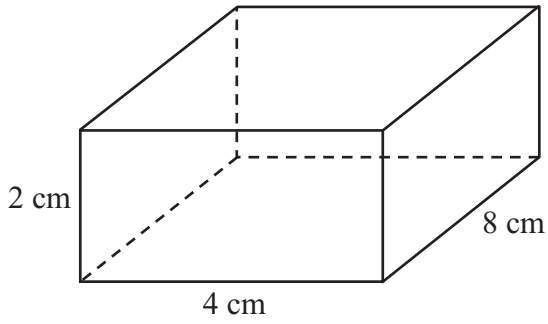


Diagram **NOT** accurately drawn

The diagram shows a solid cuboid.

What is the total surface area of this cuboid?

14 cm^2	32 cm^2	64 cm^2	80 cm^2	112 cm^2
A	**B**	**C**	**D**	**E**

12.

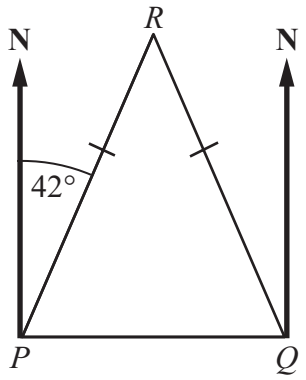


Diagram **NOT** accurately drawn

P, *Q* and *R* are 3 villages.
RP = *RQ*.
The bearing of *R* from *P* is 042°.
Q is due East of *P*.

What is the bearing of *R* from *Q*?

042°	048°	132°	312°	318°
A	**B**	**C**	**D**	**E**

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13. The mass of a block of wood is 14 kg correct to the nearest kg.

What is the greatest possible mass of the block?

14.0 kg	14.4 kg	14.449 kg	14.5 kg	14.9 kg
A	**B**	**C**	**D**	**E**

---

14. What is 328.647 when rounded correct to 2 significant figures?

33	320	330	328.65	330.65
A	**B**	**C**	**D**	**E**

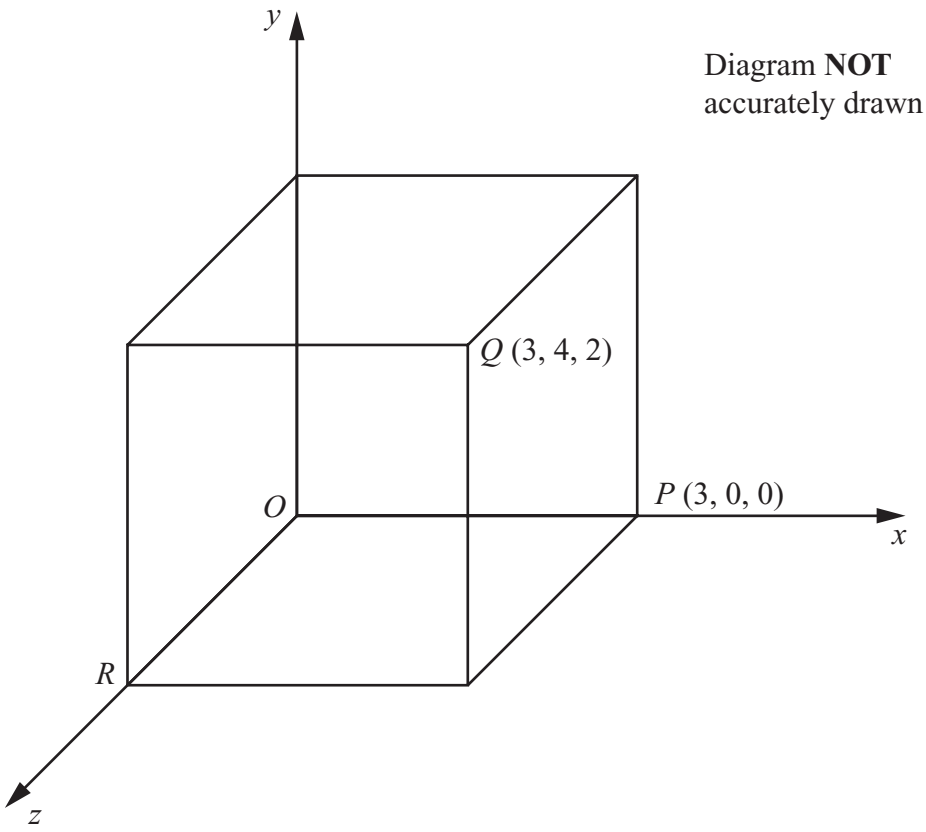
---

15. Expand $2x(2x+3y)$

$2x^2 + 2xy$	$4x^2 + 3y$	$4x^2 + 2xy$	$2x^2 + 6xy$	$4x^2 + 6xy$
A	**B**	**C**	**D**	**E**

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16.



The diagram shows a cuboid.
O, P, Q and R are vertices of the cuboid.

The point P has coordinates (3, 0, 0)
The point Q has coordinates (3, 4, 2)

What are the coordinates of the point R?

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

---

17. Expand $(x+3)(x+7)$

$2x+10$	$2x+21$	x^2+21	$x^2+10x+10$	$x^2+10x+21$
A	**B**	**C**	**D**	**E**

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18. $4t + 2t(t+1) =$

$6t^2 + 6t$	$2t^2 + 4t + 1$	$2t^2 + 6t$	$8t + 1$	$6t^3 + 2t$
A	**B**	**C**	**D**	**E**

---

19. Which expression is a factor of $y^2 - 7y - 8$?

$(y+1)$	$(y-1)$	$(y+2)$	$(y-2)$	$(y+8)$
A	**B**	**C**	**D**	**E**

---

20. P has coordinates (–3, 8, 3)
Q has coordinates (–1, 2, –5)

What are the coordinates of the midpoint of the line PQ?

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

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21. Expand $(2x - 3y)(3x - 6y)$

A	B	C	D	E
$6x - 18y$	$6x^2 + 18y^2$	$6x^2 - 21xy + 18y^2$	$5x^2 + 21xy - 18y^2$	$6x^2 - 21xy + 18y$

22.

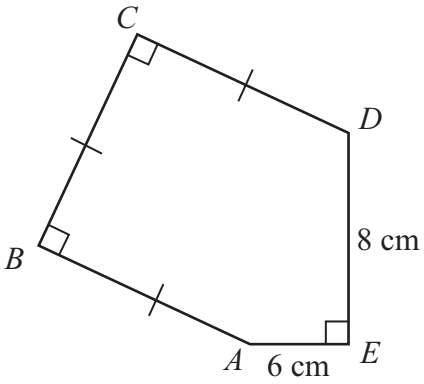


Diagram **NOT** accurately drawn

$AB = BC = CD$.
The perimeter of $ABCDE$ is 44 cm.

The area of $ABCDE$ is

A	B	C	D	E
148 cm^2	124 cm^2	114 cm^2	100 cm^2	58 cm^2

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23. Factorise $3t^2 + 2t - 8$

$(3t-4)(t+2)$ **A**

$(3t-4)(t-2)$ **B**

$(3t+4)(t-2)$ **C**

$(3t-8)(t+1)$ **D**

$(3t+8)(t-1)$ **E**

---

24. $x = 2\times3^2\times5^2\times7$

$y = 2^2\times3\times5^2\times7^2$

What is the Lowest Common Multiple (LCM) of x and y?

$2^2\times3^2\times5^2\times7^2$ **A**

$2^3\times3^3\times5^4\times7^3$ **B**

$2\times3\times5\times7$ **C**

$1\times2\times3\times5\times7$ **D**

$2\times3\times5^2\times7$ **E**

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25. The capacity of a water tank is 4500 litres.
Water can be pumped into the tank using two pumps, A and B.
Both A and B pump water at a constant rate.

It takes 50 minutes to fill the empty tank using only A.
It takes 75 minutes to fill the empty tank using only B.

How many minutes does it take to fill the empty tank using both A and B together?

25 minutes	30 minutes	45 minutes	60 minutes	125 minutes
A	**B**	**C**	**D**	**E**

TOTAL FOR PAPER: 25 MARKS

END

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Mark Scheme (Results)

March 2010

GCSE

GCSE Mathematics (Modular) - 2381
Paper: 5382H/08

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March 2010

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March 2010 Paper 5382H_08 Mark scheme

1	2	3	4	5	6	7	8	9	10
E	E	A	C	C	D	C	B	C	B

11	12	13	14	15	16	17	18	19	20
E	E	D	C	E	B	E	C	A	A

21	22	23	24	25
C	B	A	A	B

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Paper Reference(s)

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Edexcel GCSE

Mathematics (Modular) – 2381

Paper 8 (Non-Calculator)



Higher Tier

Unit 2 Stage 1

Friday 13 November 2009 – Afternoon

Time: 30 minutes

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

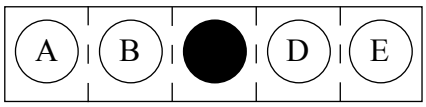
Items included with question papers
Nil

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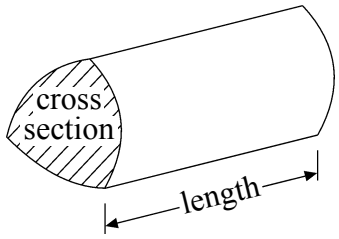
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GCSE Mathematics 2381

Formulae: Higher Tier

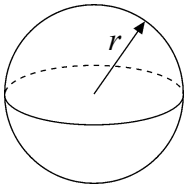
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Volume of a prism = area of cross section × length



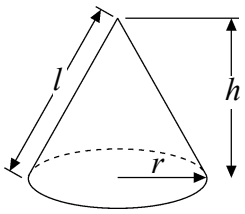
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Surface area of sphere $= 4\pi r^2$

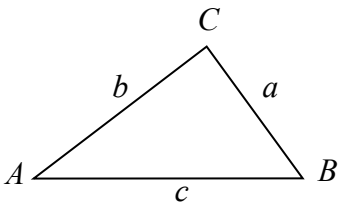


Volume of cone $= \frac{1}{3}\pi r^2 h$

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



In any triangle ABC



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

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The Quadratic Equation

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

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

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Answer ALL TWENTY FIVE questions using the answer sheet.

You must NOT use a calculator.

1. $20 \div -5 =$

4	15	–15	0.25	–4
A	**B**	**C**	**D**	**E**

---

2. Here are the first four terms in a sequence of numbers.

9 16 25 36

What is the next term in the sequence?

52	64	40	49	45
A	**B**	**C**	**D**	**E**

---

3. Which is the best estimate for the value of $\frac{6.1 \times 9.6}{19.6}$?

5	2.5	30	4	3
A	**B**	**C**	**D**	**E**

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4. Simplify $6a - 2m - 3a + 6m$

$3a + 8m$	$9a + 4m$	$3a + 4m$	$3a - 8m$	$7am$
A	**B**	**C**	**D**	**E**

---

5. Here is a prism.

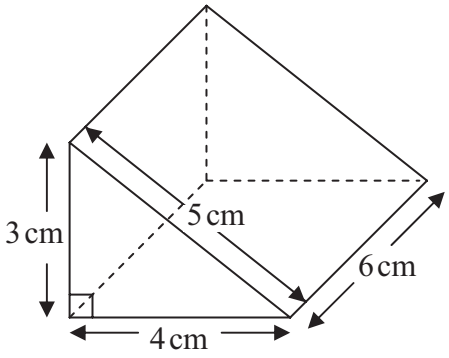


Diagram **NOT** accurately drawn

What is the total surface area of the prism?

$100\,cm^2$	$60\,cm^2$	$72\,cm^2$	$36\,cm^2$	$84\,cm^2$
A	**B**	**C**	**D**	**E**

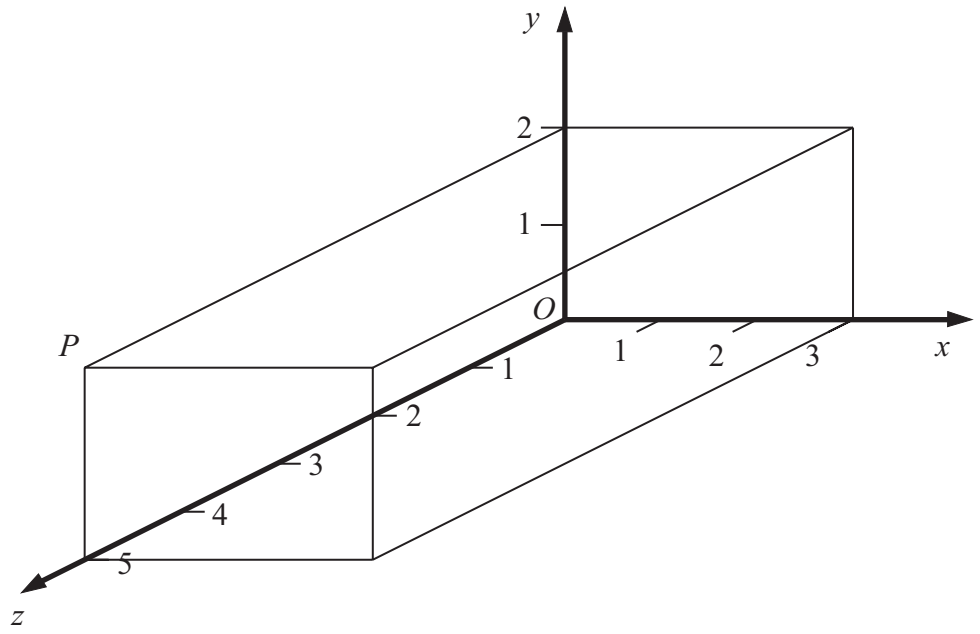
---

6. Factorise fully $6x + 12$

$6(x + 12)$	$3(2x + 4)$	$3(2x + 9)$	$6(x + 2)$	$2(3x + 6)$
A	**B**	**C**	**D**	**E**

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7. Here is a cuboid drawn on a 3-D grid.
The point P is a vertex of the cuboid.



What are the coordinates of the point P?

(2, 5, 0)	(2, 0, 5)	(0, 3, 2)	(3, 0, 2)	(0, 2, 5)
A	**B**	**C**	**D**	**E**

---

8. $\sqrt{(5^2 + 12^2)} =$

13	14	15	16	17
A	**B**	**C**	**D**	**E**

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9. The coordinates of the point A are $(-3, 9)$.

The coordinates of the point B are $(5, 1)$.

M is the midpoint of the line AB.

What are the coordinates of the point M?

$(2, 8)$	$(1, 5)$	$(2, 5)$	$(4, 5)$	$(1, 4)$
A	**B**	**C**	**D**	**E**

---

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

7 11 15 19 23

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

$n+4$	$7n+4$	$4n-1$	$4n+3$	$4n$
A	**B**	**C**	**D**	**E**

---

11. $2\frac{2}{5} + 1\frac{1}{2} =$

$3\frac{3}{10}$	$3\frac{3}{5}$	$3\frac{3}{7}$	$3\frac{7}{10}$	$3\frac{9}{10}$
A	**B**	**C**	**D**	**E**

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12.

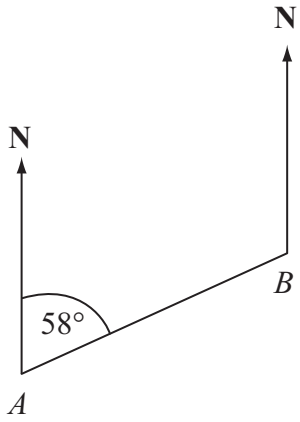


Diagram **NOT** accurately drawn

The bearing of B from A is 058°.

What is the bearing of A from B?

148°	302°	058°	238°	122°
A	**B**	**C**	**D**	**E**

---

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

$5x + 2$	$5x - 1$	$5x + 7$	$7x$	$5x + 22$
A	**B**	**C**	**D**	**E**

---

14. What is 3.42×10^{-3} when written as an ordinary number?

342	0.0342	0.00342	0.000342	3420
A	**B**	**C**	**D**	**E**

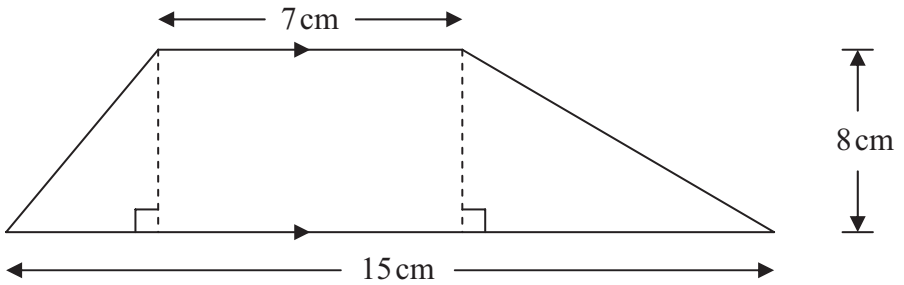
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15. Expand and simplify $(x + 3)(x - 5)$

$x^2 + 2x - 15$	$x^2 - 8x - 15$	$x^2 - 2x - 8$	$x^2 + 3x - 2$	$x^2 - 2x - 15$
A	**B**	**C**	**D**	**E**

16.

Diagram **NOT** accurately drawn



The area of this shape is

$88\,cm^2$	$30\,cm^2$	$176\,cm^2$	$225\,cm^2$	$100\,cm^2$
A	**B**	**C**	**D**	**E**

---

17. What is 450 000 when written in standard form?

4.5×10^4	4.5×10^5	45×10^4	4.5×10^3	0.45×10^6
A	**B**	**C**	**D**	**E**

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18. The length of a pen is 14 cm to the nearest cm.

What is the maximum possible length of the pen?

15 cm	14.99 cm	14.9 cm	14.45 cm	14.5 cm
A	**B**	**C**	**D**	**E**

---

19. Factorise the expression $x^2 + 8x + 12$

$x(x + 8) + 12$	$(x + 1)(x + 12)$	$(x + 2)(x + 6)$	$(x + 3)(x + 4)$	$(x + 5)(x + 7)$
A	**B**	**C**	**D**	**E**

---

20. What is 108 km/h in m/s?

36 m/s	30 m/s	300 m/s	24 m/s	240 m/s
A	**B**	**C**	**D**	**E**

---

21. What is the number 0.05997 correct to 3 significant figures?

0.06	0.060	0.599	0.06000	0.0600
A	**B**	**C**	**D**	**E**

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22. $(4x - 3)(3x + 7) = 12x^2 + ax + b$, for all values of x.

What is the value of a and the value of b?

A	B	C	D	E
$a = 7, \quad b = -21$	$a = 7, \quad b = -4$	$a = -7, \quad b = 4$	$a = 37, \quad b = -21$	$a = 19, \quad b = -21$

---

23. Which expression is a factor of $6x^2 - 11x + 4$?

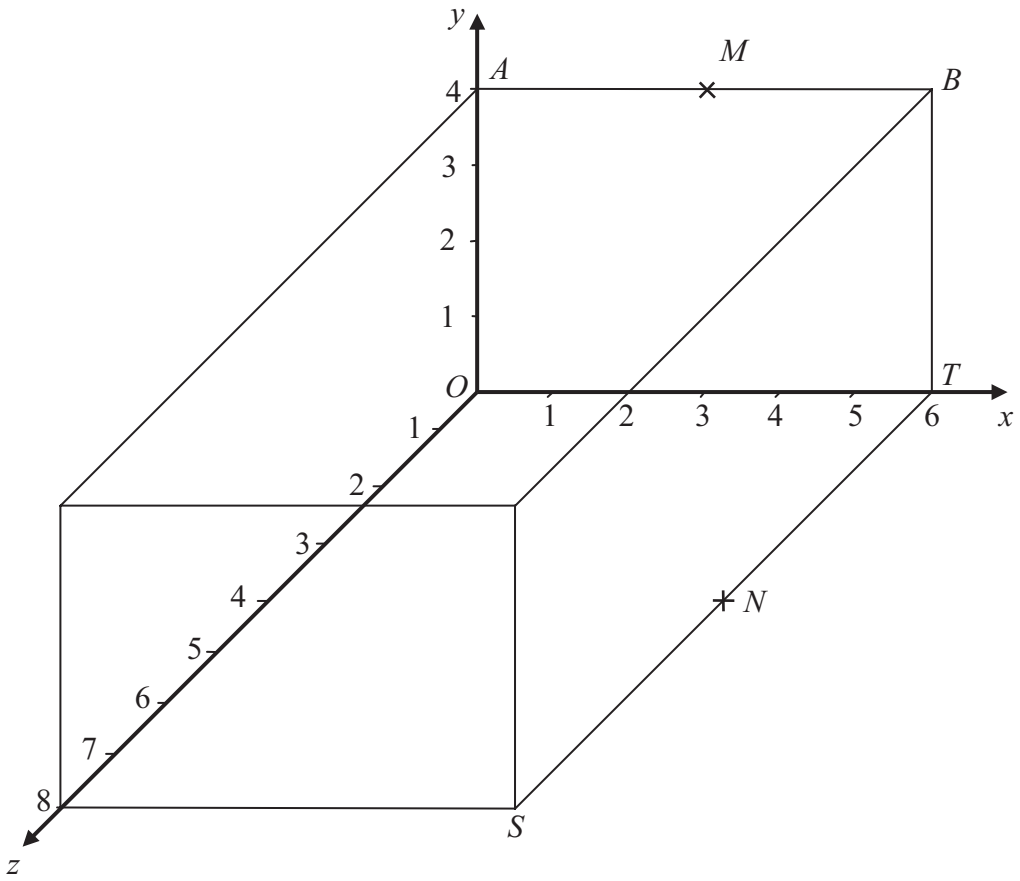
A	B	C	D	E
$6x - 1$	$2x + 1$	$3x - 2$	$3x - 4$	$x - 1$

---

24. Expand $(3x - y)(2x + 3y)$

A	B	C	D	E
$6x^2 + 7xy - 3y^2$	$5x^2 + 7xy + 2y^2$	$6x^2 + 9xy - 3y^2$	$6x^2 - 2xy - 3y^2$	$6x^2 - 3y^2$

25.



The cuboid is drawn on a 3-D grid.
The points A, B, S and T are vertices of the cuboid.

M is the midpoint of AB.
N is the midpoint of ST.

What are the coordinates of the midpoint of the line MN?

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

TOTAL FOR PAPER: 25 MARKS

END

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November 2009

GCSE

GCSE Mathematics (Modular) - 2381
Paper: 5382H/08

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November 2009

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UNIT 2 STAGE 1 5382H PAPER 08

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Answer	E	D	E	C	E	D	E	A	B	D
Question	11	12	13	14	15	16	17	18	19	20
Answer	E	D	A	C	E	A	B	E	C	B
Question	21	22	23	24	25					
Answer	E	E	D	A	E					

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Edexcel GCSE

Mathematics (Modular) – 2381

Paper 8 (Non-Calculator)



Higher Tier

Unit 2 Stage 1

Thursday 11 June 2009 – Afternoon

Time: 30 minutes

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

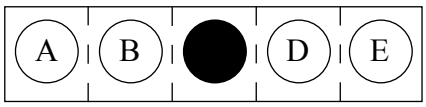
Items included with question papers
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Use a HB pencil. Do not open this booklet until you are told to do so.

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 12 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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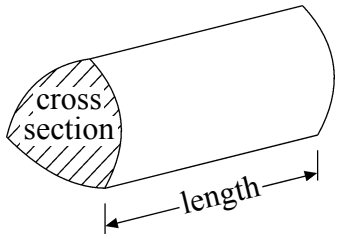
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GCSE Mathematics

Formulae: Higher Tier

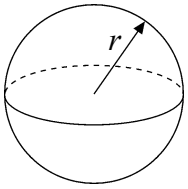
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Volume of a prism = area of cross section × length



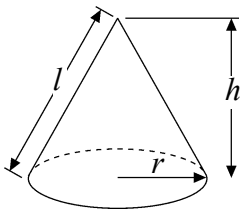
Volume of sphere $= \frac{4}{3}\pi r^3$

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

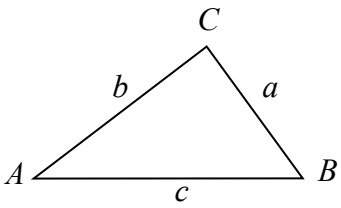


Volume of cone $= \frac{1}{3}\pi r^2 h$

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

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

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Answer ALL TWENTY FIVE questions using the answer sheet.

You must NOT use a calculator.

1. What are the coordinates of the midpoint of the line joining $P(3, 4)$ to $Q(5, 8)$?

$(2, 4)$	$(8, 12)$	$\left(3\frac{1}{2}, 4\frac{1}{2}\right)$	$(4, 6)$	$(4, 12)$
A	**B**	**C**	**D**	**E**

---

2. Pens cost 10p each. Pencils cost 12p each.

What is an expression for the total cost, in pence, of x pens and y pencils?

$x + y$	$x = 10 + y = 12$	$12x + 10y$	$(10 + 12)xy$	$10x + 12y$
A	**B**	**C**	**D**	**E**

---

3. What is 72 written as a product of its prime factors?

8×9	$1 \times 2 \times 2 \times 2 \times 3 \times 3$	$2 \times 4 \times 9$	$2 + 2 + 2 + 3 + 3$	$2 \times 2 \times 2 \times 3 \times 3$
A	**B**	**C**	**D**	**E**

---

4. $0.64 \div 0.2 =$

3.2	0.032	0.32	12.8	1.28
A	**B**	**C**	**D**	**E**

---

5. The nth term of a sequence is $3n + 5$

What is the 6th term of the sequence?

5	14	41	23	33
A	**B**	**C**	**D**	**E**

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6.

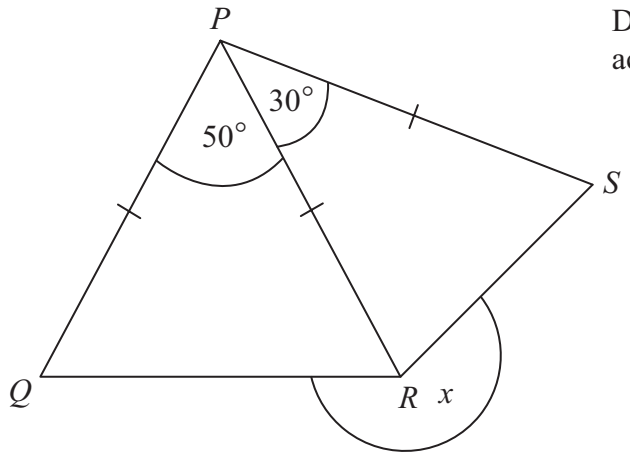


Diagram **NOT** accurately drawn

Triangle PQR and triangle PRS are both isosceles.
$PQ = PR = PS$.
Angle $QPR = 50°$.
Angle $RPS = 30°$.

What is the size of the angle x?

230°	220°	260°	250°	210°
A	**B**	**C**	**D**	**E**

---

7. Which is the smallest fraction?

$\frac{6}{8}$	$\frac{2}{3}$	$\frac{5}{6}$	$\frac{17}{24}$	$\frac{1}{2}$
A	**B**	**C**	**D**	**E**

---

8. What is 23 860.868 written correct to two significant figures?

24 000	24	2 386.86	23 860.87	23 000
A	**B**	**C**	**D**	**E**

---

9. Here are the first 5 terms of an arithmetic sequence.

3 7 11 15 19

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

$n + 4$	$3n + 4$	$4n + 3$	$4n - 1$	$4n$
A	**B**	**C**	**D**	**E**

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10. Expand and simplify $3(2x + y) - (x - 2y)$

$5x + 5y$	$5x + y$	$6x^2 - 9xy + 6y^2$	$6x + 3y$	$5x + 3y$
A	**B**	**C**	**D**	**E**

---

11. The length of a line is 7 cm measured to the nearest cm.

What is the greatest length the line could be?

7 cm	7.05 cm	7.49 cm	7.4 cm	7.5 cm
A	**B**	**C**	**D**	**E**

---

12. The speed of an aeroplane is 480 kilometres per hour.

How far does the aeroplane fly in 2 hours 30 minutes?

960 km	1200 km	1104 km	192 km	11 040 km
A	**B**	**C**	**D**	**E**

---

13. $(x+3)(x+5) =$

$2x + 15$	$2x + 8$	$x^2 + 15$	$x^2 + 8x + 15$	$x^2 + 8x + 8$
A	**B**	**C**	**D**	**E**

---

14. What are the coordinates of the midpoint of the line joining P (−3, 2, 4) to Q (5, 1, 8) ?

(1, 1.5, 6)	(2, −1, 4)	(8, −1, 4)	(1, −0.5, 2)	(2, 3, 12)
A	**B**	**C**	**D**	**E**

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15.

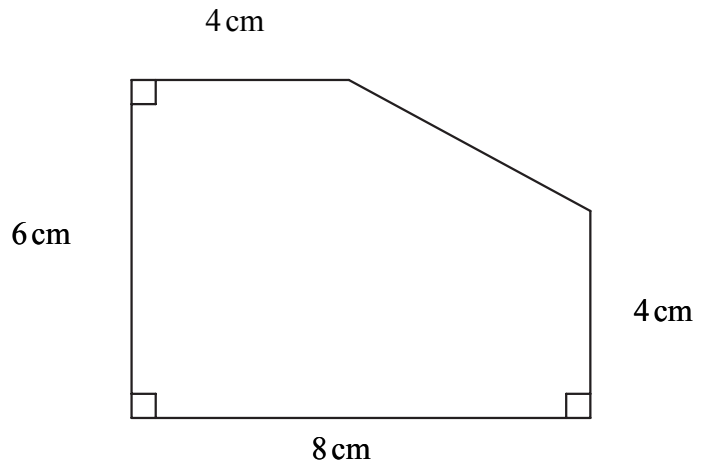


Diagram **NOT** accurately drawn

What is the area of the shape?

$44\,cm^2$	$22\,cm^2$	$40\,cm^2$	$56\,cm^2$	$768\,cm^2$
A	**B**	**C**	**D**	**E**

---

16. What is 0.00643 in standard form?

6.43×10^{-1}	0.643×10^{-2}	6.4×10^{-3}	643×10^{-5}	6.43×10^{-3}
A	**B**	**C**	**D**	**E**

---

17. One of the factors of $6x^2 - 9xy$ is

$(2x - 3y)$	$(3x - 3y)$	$(2x + 3y)$	$(2x3y)$	$(2x - 3xy)$
A	**B**	**C**	**D**	**E**

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18.

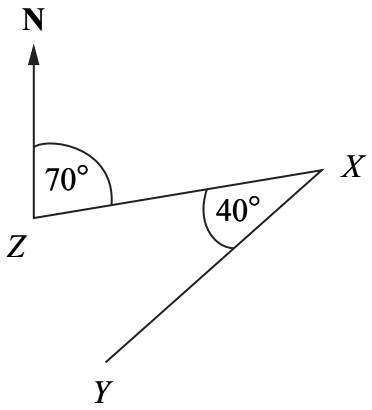


Diagram **NOT** accurately drawn

X, *Y* and *Z* are 3 points.

The bearing of *X* from *Z* is 070°.
Angle *YXZ* = 40°.

Work out the bearing of *Y* from *X*.

A	B	C	D	E
110°	040°	030°	230°	210°

---

19. Factorise completely $6x^4 + 6x^2$

A	B	C	D	E
$x^2(6x^2 + 6)$	$6x^2(x^2 + 6)$	$6x^2(6x^2 + 1)$	$6x^2(x^2 + 1)$	$6x^4(6x^2 + 1)$

---

20. $(2x - 3y)(3x + 2y) =$

A	B	C	D	E
$6x^2 - 6y^2$	$6x^2 - 5xy - 6y^2$	$6x^2 - xy - 6y$	$6x^2 - 5xy - 6y$	$6x^2 + xy - 5y^2$

---

21. $5\frac{1}{4} \times 2\frac{1}{7} =$

A	B	C	D	E
$10\frac{1}{28}$	$10\frac{11}{28}$	$11\frac{1}{6}$	$10\frac{2}{11}$	$11\frac{1}{4}$

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22. Which is a factor of $2x^2 - 7x - 4$?

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

23.

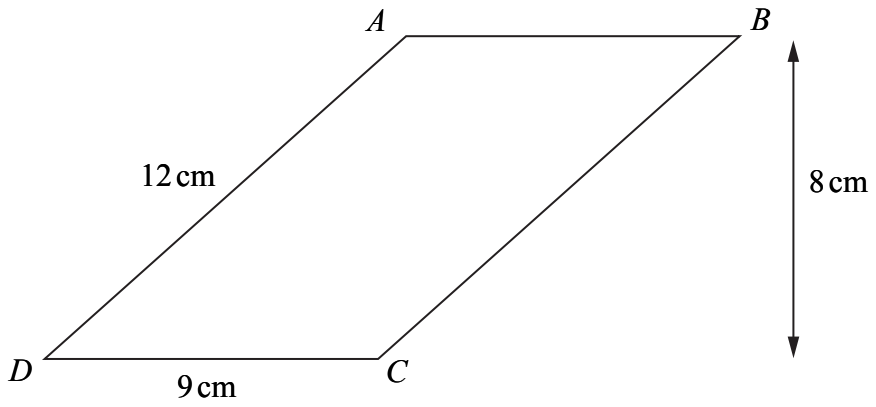


Diagram **NOT** accurately drawn

ABCD is a parallelogram.

AD = 12 cm.
DC = 9 cm.
The perpendicular distance of *AB* from *CD* is 8 cm.

What is the perpendicular distance of *AD* from *BC* ?

6 cm	7 cm	8 cm	9 cm	10 cm
A	**B**	**C**	**D**	**E**

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24. The diagram shows a cuboid drawn on a 3-D grid.

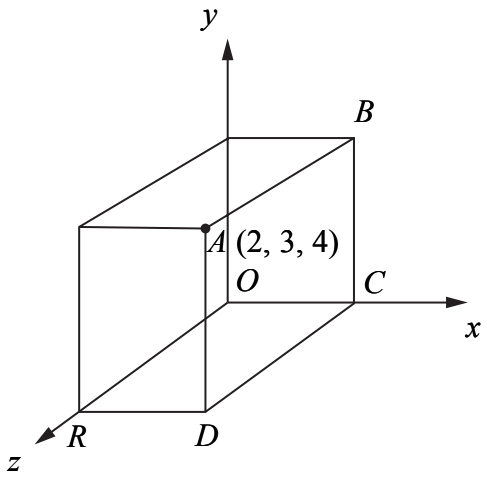


Diagram **NOT** accurately drawn

The base of the cuboid is *OCDR*.
The point *C* is on the *x*-axis.
The point *R* is on the *z*-axis.

A = (2, 3, 4).

What is the area of the face *ABCD* ?

9	6	8	24	12
A	**B**	**C**	**D**	**E**

---

25. $(2x + 3)^2 - (2x + 3)(x - 1) =$

$(2x + 3)(x + 2)$	$x + 6$	$2x^2 + x + 6$	$2x^2 - x + 12$	$(2x + 3)(x + 4)$
A	**B**	**C**	**D**	**E**

TOTAL FOR PAPER: 25 MARKS

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Mathematics (Modular) – 2381

Paper 8 (Non-Calculator)



Higher Tier

Unit 2 Stage 1

Tuesday 3 March 2009 – Afternoon

Time: 30 minutes

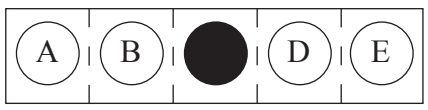
Materials required for examination	**Items included with question papers**
Multiple Choice Answer Sheet Ruler graduated in centimetres and millimetres, protractor, compasses, HB pencil, eraser.	Nil

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.

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For each question, choose the right answer, A, B, C, D or E and mark it in HB pencil on the answer sheet.
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Answer **all** the questions.

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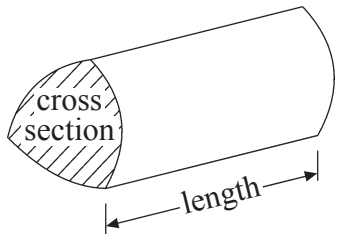
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GCSE Mathematics 2381

Formulae: Higher Tier

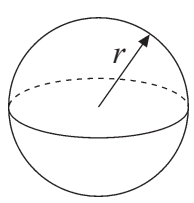
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Volume of a prism = area of cross section × length



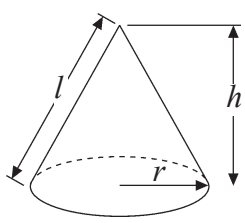
Volume of sphere $= \frac{4}{3}\pi r^3$

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

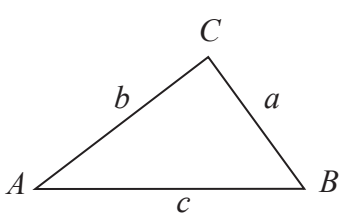


Volume of cone $= \frac{1}{3}\pi r^2 h$

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

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Answer ALL TWENTY FIVE questions using the answer sheet.

You must NOT use a calculator.

1. Given that $47 \times 81.6 = 3835.2$

What is the value of 0.47×816?

383.52	38 352	38.352	3835.2	3.8352
A	**B**	**C**	**D**	**E**

---

2. Simplify $5e - 3f + e + 4f$

$6ef$	$5e + f$	$6e - 7f$	$6e - f$	$6e + f$
A	**B**	**C**	**D**	**E**

3.

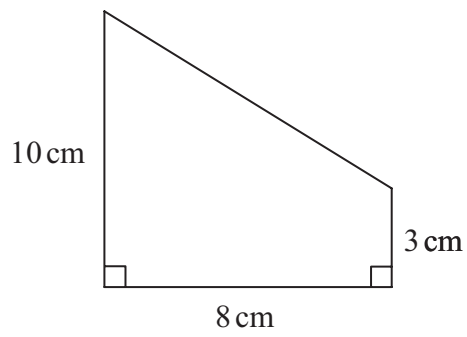


Diagram **NOT** accurately drawn

What is the area of this shape?

21 cm^2	52 cm^2	104 cm^2	80 cm^2	240 cm^2
A	**B**	**C**	**D**	**E**

---

4. Factorise $x^2 + 3x$

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

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5.

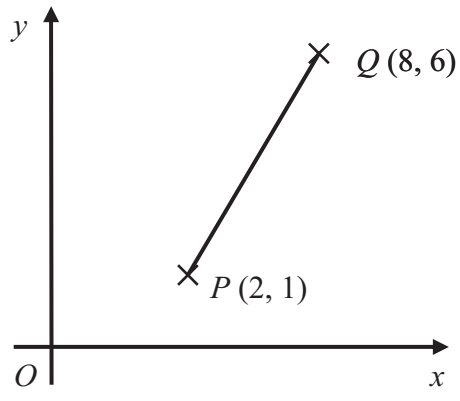


Diagram **NOT** accurately drawn

P is the point (2, 1).
Q is the point (8, 6).

Which are the coordinates of the midpoint of PQ?

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

---

6. What is the Lowest Common Multiple (LCM) of 24 and 60?

2	120	12	1440	240
A	**B**	**C**	**D**	**E**

---

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

3 8 13 18 23

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

$n + 5$	$5n$	$5n + 3$	$3n - 2$	$5n - 2$
A	**B**	**C**	**D**	**E**

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8. $\frac{2}{3} + \frac{1}{5} =$

$\frac{3}{8}$	$\frac{2}{15}$	$\frac{13}{15}$	$\frac{3}{15}$	$\frac{11}{15}$
A	**B**	**C**	**D**	**E**

---

9. The weight of a suitcase is 14 kg correct to the nearest kilogram.

What is the **greatest** possible weight of the suitcase?

14.04 kg	14.05 kg	14.4 kg	14.5 kg	14.9 kg
A	**B**	**C**	**D**	**E**

10.

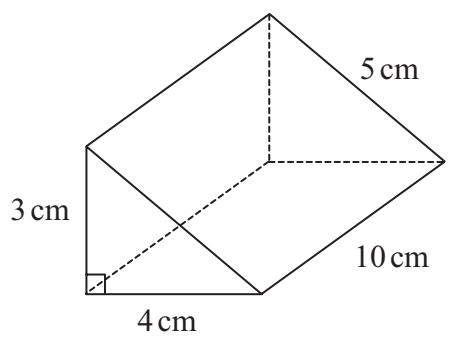


Diagram **NOT** accurately drawn

What is the total surface area of the triangular prism?

60 cm^2	132 cm^2	144 cm^2	120 cm^2	600 cm^2
A	**B**	**C**	**D**	**E**

---

11. Which is the best estimate for the value of $\frac{38.3 \times 51.7}{2.1}$?

750	2000	1000	1500	100
A	**B**	**C**	**D**	**E**

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12.

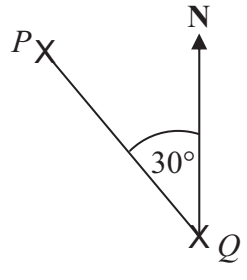


Diagram **NOT** accurately drawn

What is the bearing of P from Q?

030°	120°	150°	210°	330°
A	**B**	**C**	**D**	**E**

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13. There are 80 litres of water in a tank.

Rob turns a tap on.
Water flows from the tank at a rate of 5 litres per minute.

How many minutes will it take for the tank to become completely empty?

5 minutes	400 minutes	20 minutes	16 minutes	80 minutes
A	**B**	**C**	**D**	**E**

---

14. Expand and simplify $(x + 2)(x - 5)$

$x^2 - 10$	$x^2 - 3x - 3$	$x^2 - 3x - 10$	$x^2 + 3x - 10$	$x^2 + 7x - 10$
A	**B**	**C**	**D**	**E**

---

15. What is 210 when written as a product of its prime factors?

2×105	$2, 3, 5, 7$	$2 \times 3 \times 35$	$2 \times 3^2 \times 7$	$2 \times 3 \times 5 \times 7$
A	**B**	**C**	**D**	**E**

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16. Factorise completely $8x^2y + 12x$

$4x(2xy + 3)$	$20x^3y$	$4x(2xy + 3x)$	$x(4xy + 12)$	$2(4x^2y + 6x)$
A	**B**	**C**	**D**	**E**

---

17. What is 0.0007 when written in standard form?

0.7×10^3	0.7×10^{-3}	7×10^{-3}	7×10^4	7×10^{-4}
A	**B**	**C**	**D**	**E**

---

18. $(x + 3)^2 =$

$x^2 + 9$	$x^2 + 6x + 9$	$2x + 6$	$x^2 + 3x + 9$	$x^2 + 6x + 6$
A	**B**	**C**	**D**	**E**

---

19. Factorise $x^2 + 14x + 24$

$(x + 8)(x + 3)$	$(x + 6)(x + 4)$	$(x + 14)(x + 24)$	$(x + 12)(x + 2)$	$(x + 12)(x + 12)$
A	**B**	**C**	**D**	**E**

---

20. $2\frac{1}{4} \times 1\frac{2}{3} =$

$3\frac{3}{4}$	$2\frac{11}{12}$	$3\frac{2}{12}$	$2\frac{2}{12}$	$3\frac{11}{12}$
A	**B**	**C**	**D**	**E**

---

21. Expand and simplify $(3x + 2y)(4x - 5y)$

$7x^2 - 7xy - 10y^2$	$7x^2 - 7xy - 10y$	$12x^2 - 7xy - 10y$	$12x^2 - 7xy - 10y^2$	$12x^2 + 7xy - 10y^2$
A	**B**	**C**	**D**	**E**

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22. One factor of $4(x + 3)^2 - 5(x + 3)$ is

$4x + 7$	$4x + 12$	$4x - 12$	$4x - 5$	$5x + 15$
A	**B**	**C**	**D**	**E**

23.

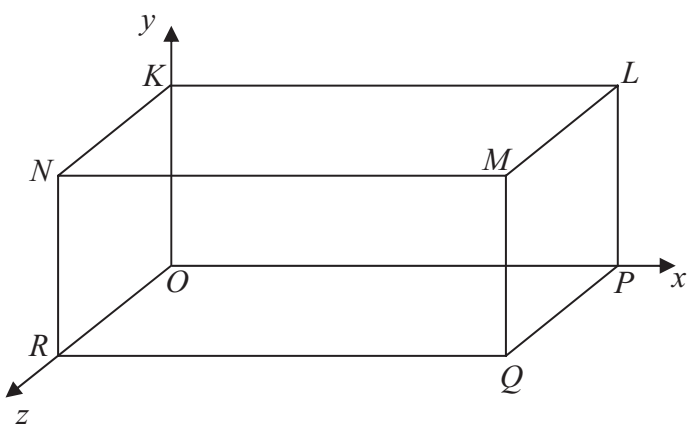


Diagram **NOT** accurately drawn

The diagram shows a cuboid on a 3-D grid.
The coordinates of the vertex M are (6, 2, 3).

What are the coordinates of the midpoint of LN?

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

---

24. $8x^2 - 29x + 15 =$

$(4x - 3)(2x - 5)$	$(4x - 5)(2x - 3)$	$(8x - 3)(x - 5)$	$(8x - 5)(x - 3)$	$(8x - 15)(x - 1)$
A	**B**	**C**	**D**	**E**

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25. A plane is flying at a speed of 1440 kilometres per hour.

How long, in seconds, will the plane take to fly a distance of 1 kilometre?

0.4 seconds	2.4 seconds	2.5 seconds	4 seconds	24 seconds
A	**B**	**C**	**D**	**E**

TOTAL FOR PAPER: 25 MARKS

END

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