

Surname	Initial(s)
Signature	

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
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.

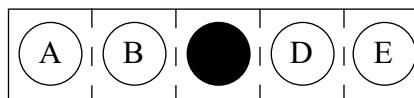
Before the test begins:

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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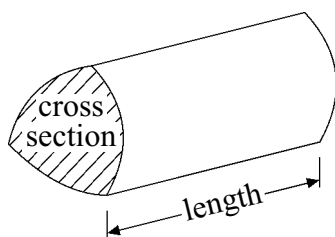
P 3 8 9 4 4 A

Turn over

Formulae: Higher Tier

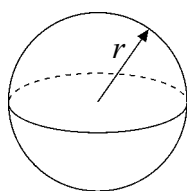
You must not write on this formulae page.
Anything you write on this formulae page will gain NO credit.

Volume of a prism = area of cross section \times length



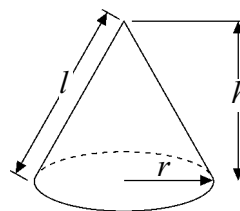
Volume of sphere = $\frac{4}{3}\pi r^3$

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

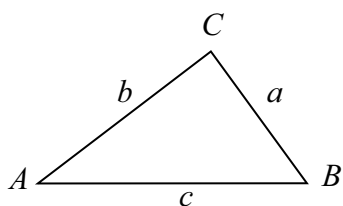


Volume of cone = $\frac{1}{3}\pi r^2 h$

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

Answer ALL TWENTY FIVE questions using the answer sheet.

You must NOT use a calculator.

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

$6x - 5y$

A

$6x - 3y$

B

$10x - 6y$

C

$-2x + 5y$

D

$6x - 4$

E

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

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

40

A

198

B

200

C

180

D

218

E

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

29

A

289.63

B

300

C

289.62

D

290

E

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

3

A

60

B

30

C

90

D

1

E

5. Here is a solid cuboid.

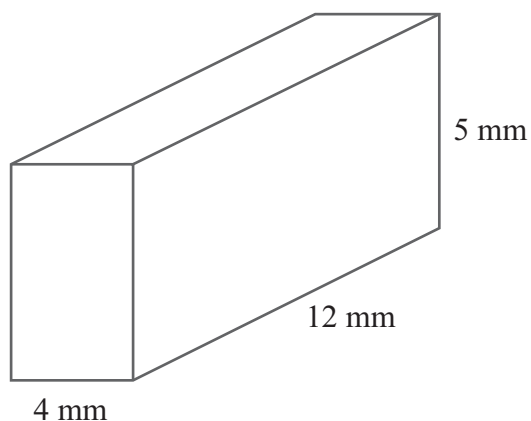


Diagram **NOT**
accurately drawn

What is the total surface area of the cuboid?

240 mm²

84 mm²

128 mm²

256 mm²

120 mm²

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 $\frac{3.95 \times 11.2}{0.53}$?

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?

$x - 5$

$2(x - 5)$

$\frac{5x}{2}$

$\frac{x - 5}{2}$

$2(x + 5)$

A

B

C

D

E

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

$$406 \div 0.28 =$$

14500

A

145000

B

14.5

C

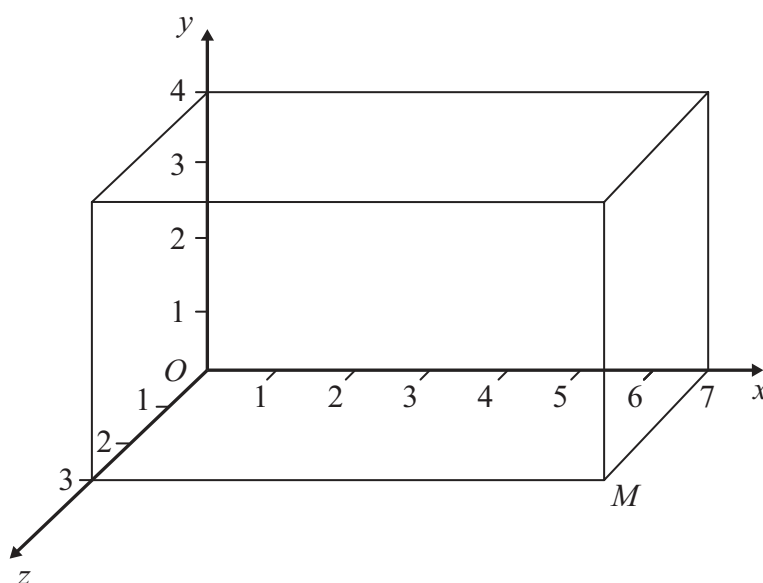
145

D

1450

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)

A

(7, 3, 0)

B

(0, 7, 4)

C

(4, 3, 7)

D

(7, 0, 3)

E

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

2

7

12

17

22

Which is the expression for the n th term of the sequence?

$n - 3$

A

$5n + 3$

B

$n + 5$

C

$5n - 3$

D

$5n$

E

12. Factorise $6n - 10$

$6(n - 10)$

A

$2(3n - 10)$

B

$2(3n - 5)$

C

$-4n$

D

$2(3n + 5)$

E

13.

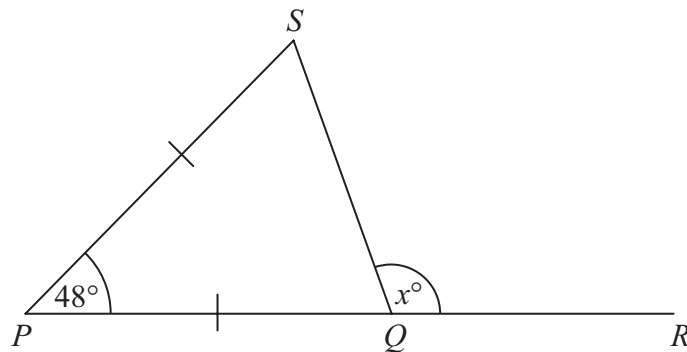


Diagram **NOT**
accurately drawn

PQR is a straight line.
 SPQ is an isosceles triangle.
Angle $SPQ = 48^\circ$.

What is the value of x ?

72

A

114

B

48

C

66

D

132

E

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

$(4, 4, 4)$

A

$(2, 2, 2)$

B

$(2, 2, 3)$

C

$(2, 0, 6)$

D

$(4, 0, 6)$

E

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

$y^2 + y - 9$

A

$y^2 - y - 20$

B

$y^2 + y + 1$

C

$y^2 + y - 20$

D

$y^2 - y - 1$

E

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

36100

A

0.0004

B

0.000361

C

3610

D

0.0000361

E

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

$2\frac{3}{4}$

A

$\frac{3}{4}$

B

$\frac{1}{2}$

C

$\frac{2}{3}$

D

$2\frac{1}{2}$

E

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

$4pq(p + q)$

A

$pq(4p + 6q)$

B

$2p(2p + 3q^2)$

C

$2pq^2(2p + 3q)$

D

$2pq(2p + 3q)$

E

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

900

A

1.5

B

90

C

15

D

20

E

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

$$(2x + 10y)(2x - 10y)$$

A

$$2(x + 5y)(x - 5y)$$

B

$$4(x + 5y)(x - 5y)$$

C

$$(2x - 10y)(2x - 10y)$$

D

$$4(x - 5y)(x - 5y)$$

E

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

$$9m^2 - 12m + 4$$

A

$$9m^2 - 4$$

B

$$9m^2 + 4$$

C

$$9m^2 - 12m - 4$$

D

$$9m^2 + 12m + 4$$

E

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

$$4.8 \times 10^7$$

A

$$4.85 \times 10^{-7}$$

B

$$48.5 \times 10^6$$

C

$$4.85 \times 10^7$$

D

$$4.85 \times 10^5$$

E

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

$$(2x + 1)$$

A

$$(5x - 2)$$

B

$$(2x - 2)$$

C

$$(5x - 1)$$

D

$$(5x + 2)$$

E

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.

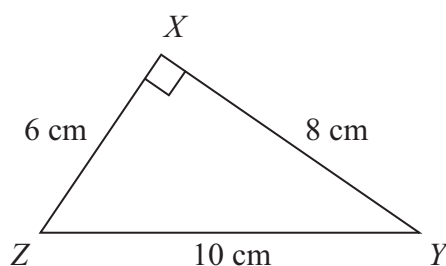


Diagram **NOT**
accurately drawn

XYZ is a right-angle triangle.

$XY = 8$ cm.

$XZ = 6$ cm.

$ZY = 10$ cm.

Angle $X = 90^\circ$.

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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