

FOR OFFICIAL USE

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X100/101



Total
mark

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NATIONAL
QUALIFICATIONS
2009

THURSDAY, 21 MAY
1.00 PM – 1.35 PM

MATHEMATICS
INTERMEDIATE 1
Units 1, 2 and 3
Paper 1
(Non-calculator)

Fill in these boxes and read what is printed below.

Full name of centre

--

Town

--

Forename(s)

--

Surname

--

Date of birth

Day Month Year

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Scottish candidate number

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Number of seat

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- 1 You may NOT use a calculator.**
- 2 Write your working and answers in the spaces provided. Additional space is provided at the end of this question-answer book for use if required. If you use this space, write clearly the number of the question involved.
- 3 Full credit will be given only where the solution contains appropriate working.
- 4 Before leaving the examination room you must give this book to the invigilator. If you do not you may lose all the marks for this paper.

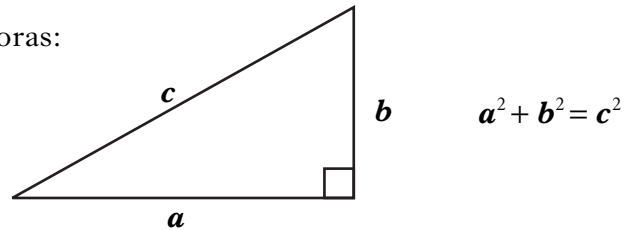
Use blue or black ink. Pencil may be used for graphs and diagrams only.



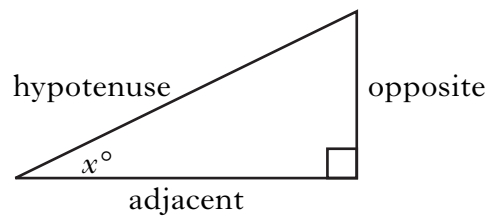
FORMULAE LIST

Circumference of a circle: $C = \pi d$
Area of a circle: $A = \pi r^2$

Theorem of Pythagoras:



Trigonometric ratios
in a right angled
triangle:



$$\tan x^\circ = \frac{\text{opposite}}{\text{adjacent}}$$

$$\sin x^\circ = \frac{\text{opposite}}{\text{hypotenuse}}$$

$$\cos x^\circ = \frac{\text{adjacent}}{\text{hypotenuse}}$$

Marks

ALL questions should be attempted.

1. (a) Find $28.7 + 4.35$.

1

(b) Find $1.89 \div 7$.

1

(c) Find $6 \times 4\frac{1}{3}$.

2

2. The cost in pounds of hiring a function room is:

$$\text{Cost} = 250 + (\text{number of people} \times 4.99)$$

Find the cost of hiring the function room for 200 people.

2

[Turn over

Marks

3. Work out the answers to the following.

(a) $9 + (-13)$

1

(b) $-56 \div (-8)$

1

4. The cash price of a television is £260.

It can be bought on hire purchase by paying a deposit of 25% of the cash price and 15 instalments of £14.

Find the total hire purchase price of the television.



3

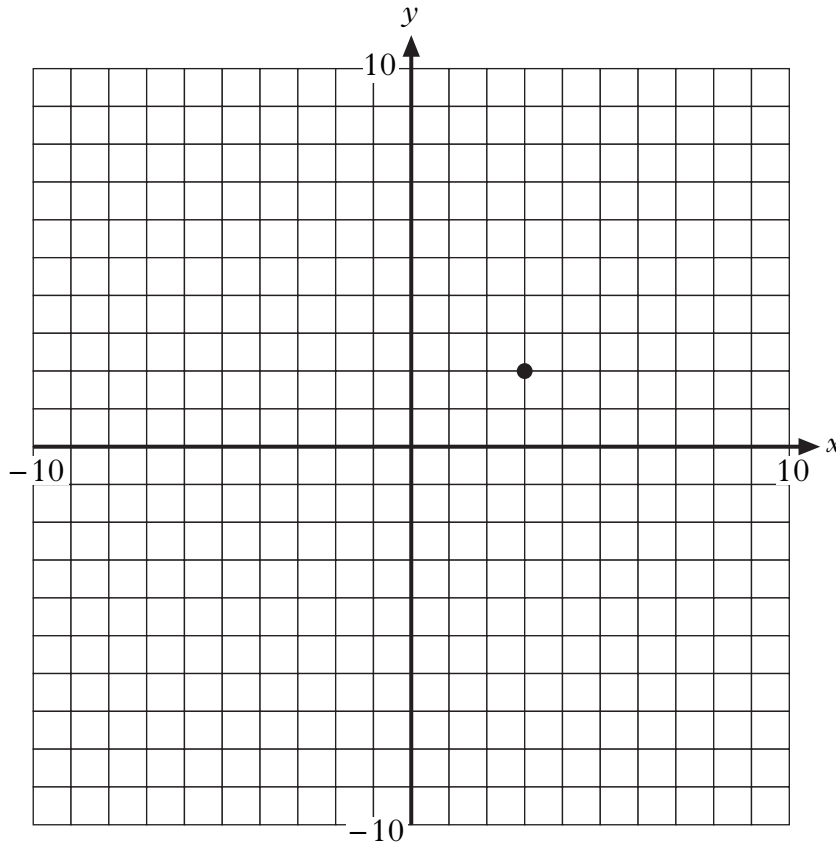
Marks

5. (a) Complete the table below for $y = 5 - x$.

x	-4	0	3	9
y			2	

2

(b) Draw the line $y = 5 - x$ on the grid.



2

[Turn over

6. Use the formula below to find the value of I when $P = 70$, $T = 0.5$ and $R = 8$.

$$I = \frac{PTR}{100}$$

Marks

3

7. A group of 40 visitors to the Edinburgh Festival Fringe were asked how many performances they had attended.

The results are shown in the frequency table below.

Number of performances	Frequency
5	2
6	9
7	11
8	9
9	4
10	4
11	1
	Total = 40

- (a) Write down the modal number of performances.

1

- (b) Find the range of the number of performances.

1

Marks

7. (continued)

(c) Complete the table below **and** find the mean number of performances.

Number of performances	Frequency	Number of performances \times Frequency
5	2	10
6	9	54
7	11	77
8	9	72
9	4	
10	4	
11	1	
	Total = 40	Total =

3

8. Solve algebraically the equation

$$4x + 11 = 46 - x.$$

3

[Turn over for Question 9 on Page eight

Marks

9. In a quiz, three contestants are each asked 20 questions.

The contestants score

- +2 points for a correct answer
- 0 points for no answer
- -1 point for a wrong answer.

SCOREBOARD	
<u>Contestant</u>	<u>Points</u>
Amy	10
John	-2
Fred	

- (a) Fred gives 4 correct answers, 15 wrong answers and no answer to 1 question.

How many points does he score?

1

- (b) Amy's score for her 20 questions is 10 points.

One way that she can score 10 points is shown in the table below.

Correct answer +2 points	No answer 0 points	Wrong answer -1 point	Total
7	9	4	10
			10
			10
			10
			10
			10

Complete the table to show **all** the possible ways that Amy can score 10 points.

3

ADDITIONAL SPACE FOR ANSWERS

ADDITIONAL SPACE FOR ANSWERS

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[BLANK PAGE]