

FOR OFFICIAL USE

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Total
Mark

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NATIONAL QUALIFICATIONS 2015

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

X100/10/01

TUESDAY, 19 MAY
1.00 PM – 1.35 PM



Fill in these boxes and read what is printed below.

Full name of centre

Town

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Forename(s)

Surname

Number of seat

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Date of birth

Day

Month

Year

Scottish candidate number

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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

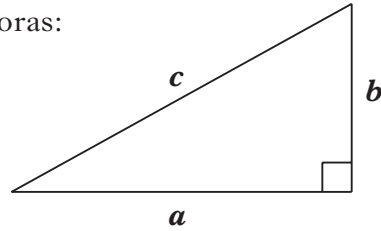
Circumference of a circle:

$$C = \pi d$$

Area of a circle:

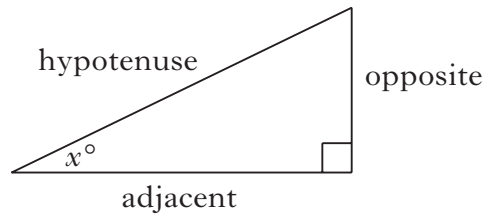
$$A = \pi r^2$$

Theorem of Pythagoras:



$$a^2 + b^2 = c^2$$

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 $1.564 - 0.38$.

1

(b) Find 3.14×7000 .

1

(c) Find $\frac{5}{6}$ of 84.

1

2. A box contains 9 apples and 15 oranges.

A piece of fruit is chosen at random from the box.

What is the probability that an apple is chosen?

Give your answer as a fraction in its simplest form.

2

[Turn over



Marks

3. The table shows the record temperatures for Braemar for the month of November.

Record high temperature	16 °C
Record low temperature	-23 °C

Find the difference between the record high and record low temperatures.

2

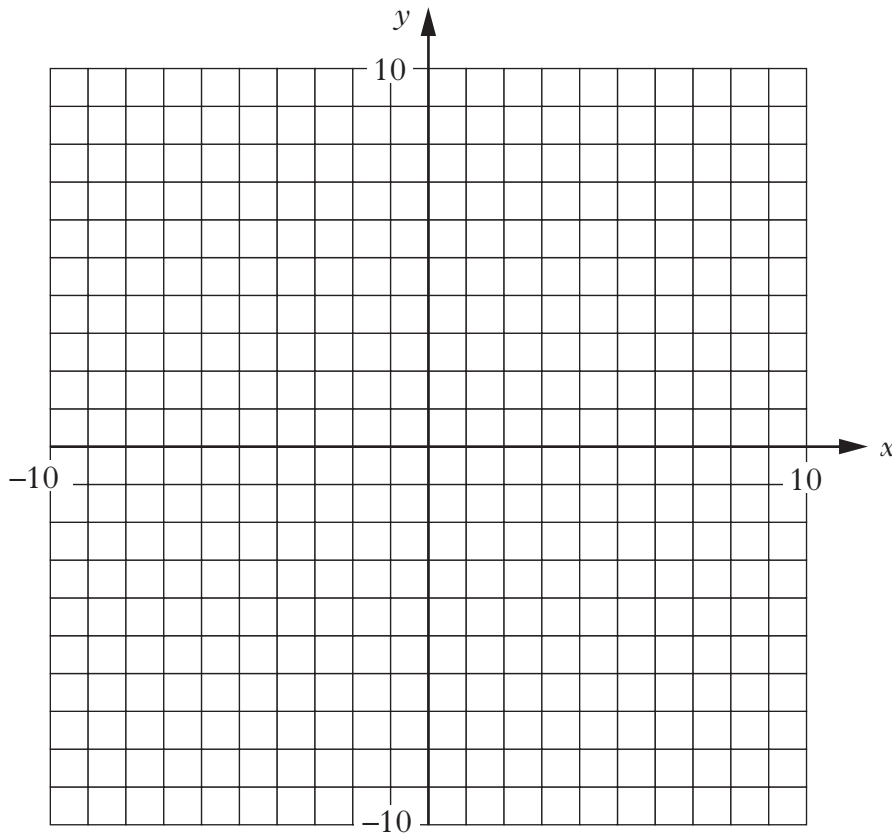


Marks

4. (a) Complete the table below for $y = 3 + 2x$.

x	-4	0	2
y			

(b) Draw the line $y = 3 + 2x$ on the grid.



2

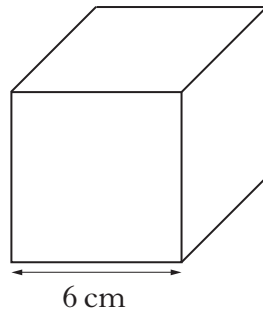
2

[Turn over



Marks

5. This ice cube melts at a rate of 8 cubic centimetres per minute.
How long will it take to melt?



3



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Marks

6. Evaluate $(g + 2)^2$ when $g = -5$.

3

[Turn over



Marks

7. Farmer Jones has seventy dairy cows.

One day he recorded the amount of milk produced by each cow.

The frequency table below shows the results.

Amount of Milk (litres)	Number of Cows
5	2
10	3
15	7
20	17
25	21
30	13
35	7
	Total = 70

(a) Write down the modal amount of milk produced.

1

(b) Complete the table below.

Amount of Milk (litres)	Number of Cows	Amount of Milk \times Number of Cows
5	2	10
10	3	30
15	7	105
20	17	340
25	21	525
30	13	
35	7	
	Total = 70	Total =

1



Marks

7. (continued)

(c) Find the mean amount of milk produced.

2

[Turn over



Marks

8. Solve algebraically the equation

$$a + 42 = 3a + 10.$$

3

9. The table below shows some travel insurance premiums charged by MegaTrip Holidays.

Number of days	INSURANCE PREMIUM per person		
	UK	Europe	Rest of world
1–6	£11	£17	£35
7–13	£13	£21	£39
14–20	£16	£26	£43

A group of nine people is travelling around Europe for two weeks.
MegaTrip Holidays gives them a group discount of 5% on their travel insurance.

Find the total insurance premium for the group.

3



Marks

10. Use the formula below to find the value of D when $f = 120$ and $t = 16$.

$$D = \frac{f}{100\sqrt{t}}$$

3

[END OF QUESTION PAPER]



ADDITIONAL SPACE FOR ANSWERS

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ADDITIONAL SPACE FOR ANSWERS

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