

FOR OFFICIAL USE

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Total Mark

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NATIONAL QUALIFICATIONS 2014

MATHEMATICS INTERMEDIATE 1

Units 1, 2 and 3

Paper 1 (Non-calculator)



* X 1 0 0 1 0 0 1 *

X100/10/01

TUESDAY, 6 MAY 9.00 AM – 9.35 AM

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.



* X 1 0 0 1 0 0 1 0 1 *

FORMULAE LIST

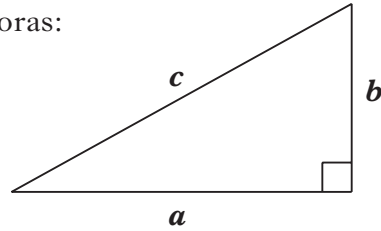
Circumference of a circle:

$$C = \pi d$$

Area of a circle:

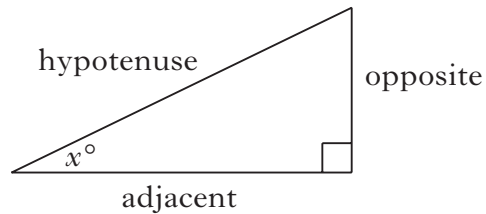
$$A = \pi r^2$$

Theorem of Pythagoras:



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

Trigonometric ratios
in a right angled
triangle:



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

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

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



* X 1 0 0 1 0 0 1 0 2 *

Marks

All questions should be attempted.

1. (a) Find $4.8 - 0.17$.

1

(b) Find $9.632 \div 8$.

1

(c) Find 5% of 60.

1

2. Jason is at college and lives in halls of residence.

He insures his belongings for £7000.

The annual premium is £9.42 for each £1000 insured.

Work out Jason's annual premium.

2

[Turn over



Marks

3. Solve algebraically the equation

$$8s - 3 = 2s + 81.$$

4. (a) Find $8 - (-13)$

(b) Find $-54 \div (-9)$

3

1

1



Marks

5. Emily is buying items for a packed lunch.
She can select from the items listed below.

Sandwich	90p
Juice	80p
Fruit	50p
Yoghurt	45p
Biscuit	35p

She will get a free toy if she spends £1.75 or more.

Emily wants to buy **three different** items.

She wants to spend £1.75 or more so that she gets a free toy.

One combination of **three different** items that Emily can buy is shown in the table below.

Sandwich 90p	Juice 80p	Fruit 50p	Yoghurt 45p	Biscuit 35p	Total Cost £
✓	✓	✓			2.20

Complete the table to show **all** the possible combinations of **three different** items that Emily can buy.

3

[Turn over



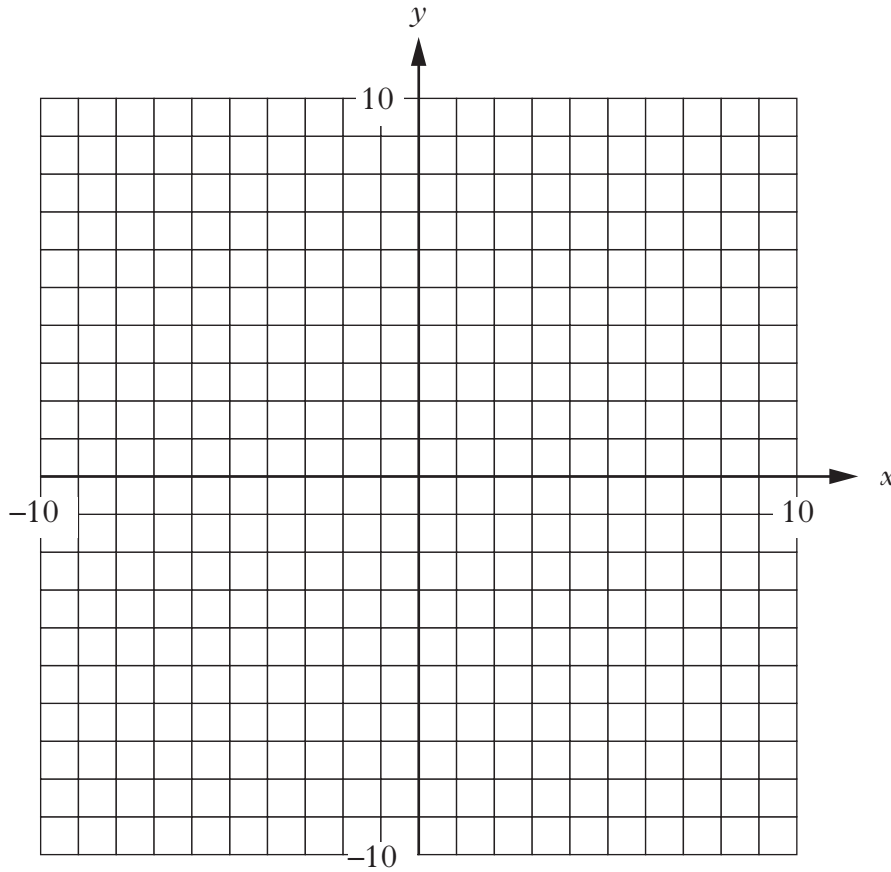
Marks

6. (a) Complete the table below for $y = 4x - 5$.

x	-1	0	3
y			

2

(b) Draw the line $y = 4x - 5$ on the grid.



2



Marks

7. Saimah has a part-time job delivering leaflets.

Each week she is paid £5 plus an extra £3 for every 40 leaflets that she delivers.

(a) One week she delivers 360 leaflets.

How much is she paid?

2

(b) The next week she is paid £50.

How many leaflets did she deliver?

2

[Turn over



Marks

8. Three hundred members of a gym were asked how often they had visited the gym during the last week.

The results are shown in the frequency table below.

Visits	Number of Members	Visits \times Number of Members
0	11	0
1	42	42
2	122	244
3	66	
4	59	
	Total = 300	Total =

- (a) Complete the table above.

- (b) Find the mean number of visits made by the members.

1

2



Marks

9. The formula for the volume of a cylinder is

$$V = \pi r^2 h.$$

Find V when $\pi = 3.14$, $r = 5$ and $h = 4$.

3

[Turn over for Question 10 on Page ten



Marks

10. Invermuir Academy is running two raffles to raise money. The table shows the number of tickets sold and the number of winning tickets for each raffle.

	Number of tickets sold	Number of winning tickets
Raffle A	600	24
Raffle B	1000	30

Robert buys one ticket for each raffle.

In which raffle does he have the greater probability of winning?

Explain your answer.

3

[END OF QUESTION PAPER]



* X 1 0 0 1 0 0 1 1 0 *

ADDITIONAL SPACE FOR ANSWERS

DO NOT
WRITE IN
THIS
MARGIN

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ADDITIONAL SPACE FOR ANSWERS

DO NOT
WRITE IN
THIS
MARGIN

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