FOR OFFICIAL USE

Total Mark

NATIONAL QUALIFICATIONS 2014

MATHEMATICS
INTERMEDIATE 1
Units 1, 2 and
Applications of Mathematics
Paper 1 (Non-calculator)

TUESDAY, 6 MAY 9.00 AM – 9.35 AM

X1011001

X101/10/01

Fill in these boxes and read what is printed below.

Full name of centre

Town

Forename(s)

Surname

Number of seat

Date of birth
Day Month Year

Scottish candidate number

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.

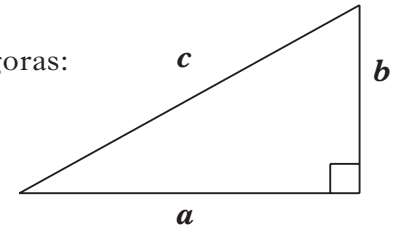
Use blue or black ink. Pencil may be used for graphs and diagrams only.

X1011001

FORMULAE LIST

Circumference of a circle: $C = \pi d$
Area of a circle: $A = \pi r^2$
Curved surface area of a cylinder: $A = 2\pi rh$

Theorem of Pythagoras:



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

DO NOT WRITE IN THIS MARGIN

Marks

All questions should be attempted.

1. (*a*) Find 4·8 – 0·17.

1

(*b*) Find 9·632 ÷ 8.

1

(*c*) Find 5% of 60.

1

[Turn over

DO NOT WRITE IN THIS MARGIN

Marks

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

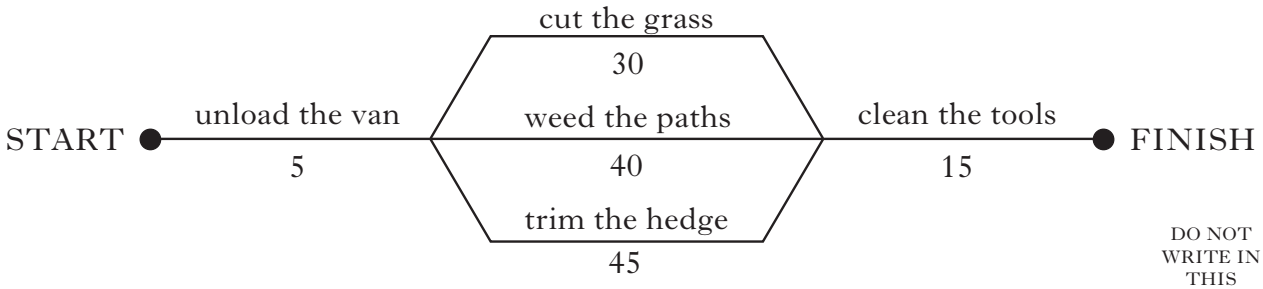
He insures his belongings for £7000.

The annual premium is £9·42 for each £1000 insured.

Work out Jason's annual premium.

2

3. The network diagram shows the time it took a squad of gardeners to do the garden of one of their customers. All times are in minutes.



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Marks

(*a*) How long did it take to cut the grass?

1

(*b*) How long did it take altogether to do the garden from start to finish?

1

4. (*a*) Find 8 – (–13)

1

(*b*) Find –54 ÷ (–9)

1

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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

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Marks

6. The heights (in metres) of nine rugby players are shown below.

1·89 1·85 1·91 2·01 1·93 1·78 1·81 2·03 1·88

(*a*) Find the lower quartile.

2

(*b*) Calculate the interquartile range.

2

[Turn over

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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

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

(*a*) Complete the table above.

1

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

2

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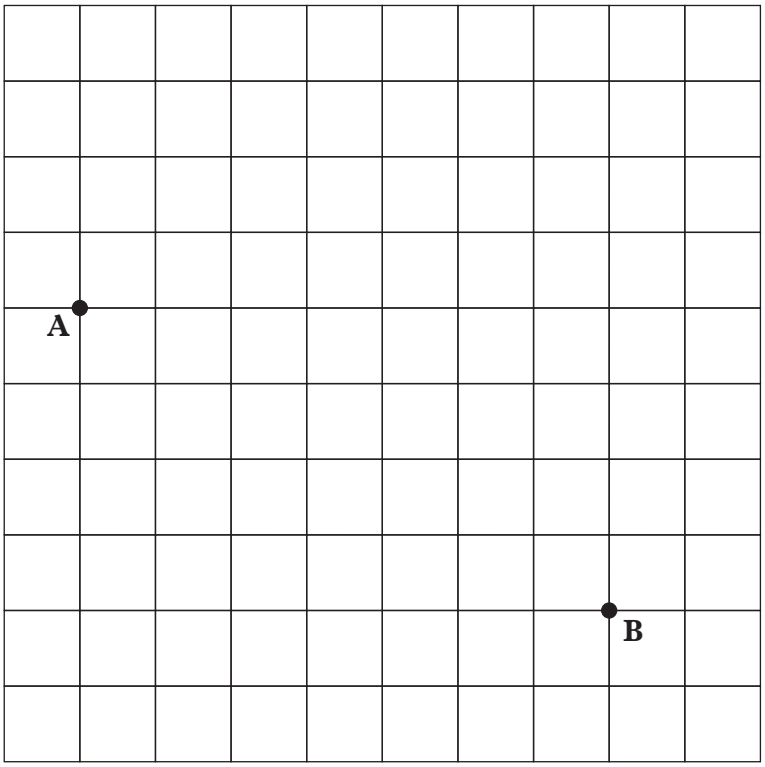
Marks

9. The scale drawing shows the positions of two wind turbines, A and B. The scale of the drawing is **1 centimetre represents 50 metres**.



(*a*) Use the scale drawing to find the distance in metres between A and B.

1

(*b*) A third wind turbine, C, lies on a bearing of

- 065 ° from A
- 315 ° from B.

Complete the scale drawing to show the position of C. **3**

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*]

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ACKNOWLEDGEMENT

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