

GENERAL CERTIFICATE OF SECONDARY EDUCATION

MATHEMATICS B (MEI)

Paper 1 Section B (Foundation Tier)

MONDAY 19 MAY 2008

Morning
Time: 45 minutes

Candidates answer on the question paper
Additional materials (enclosed): None

Additional materials (required):
Geometrical instruments
Scientific or graphical calculator
Tracing paper (optional)



Candidate
Forename

Candidate
Surname

Centre
Number

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Candidate
Number

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INSTRUCTIONS TO CANDIDATES

- Write your name in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use blue or black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- Answer **all** the questions.
- Show all your working. Marks may be given for a correct method even if the answer is incorrect.
- Do **not** write in the bar codes.
- Write your answer to each question in the space provided.

INFORMATION FOR CANDIDATES

- The number of marks is given in brackets [] at the end of each question or part question.
- You are expected to use a calculator for this section of the paper.
- Use the π button on your calculator or take π to be 3.142 unless the question says otherwise.
- The total number of marks for this Section is **36**.
- Section B starts with question 10.

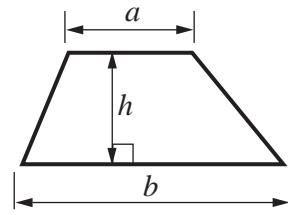
FOR EXAMINER'S USE

SECTION B

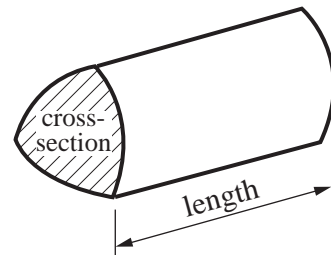
This document consists of **12** printed pages.

Formulae Sheet: Foundation Tier

Area of trapezium = $\frac{1}{2} (a + b)h$



Volume of prism = (area of cross-section) \times length



PLEASE DO NOT WRITE ON THIS PAGE

10 Which **metric** unit would it be best to use for measuring

(a) the distance from London to Liverpool,

(a) [1]

(b) the mass of a slice of bread,

(b) [1]

(c) the length of a football pitch,

(c) [1]

(d) the capacity of a car's fuel tank?

(d) [1]

11 (a) The full price of a car is £24 000.
In a sale this price is reduced by 15%.

Work out 15% of £24 000.

(a) £ [2]

(b) Raj has a car for sale at £1800.

Liz offers to pay $\frac{4}{5}$ of this price.

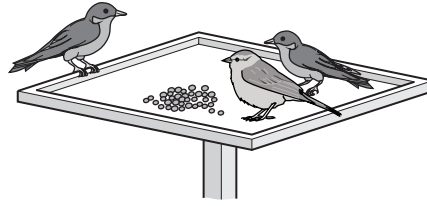
Work out how much Liz offers to pay.

(b) £ [2]

(c) A "take away" sandwich costs £2.80.
If it is eaten in the café, VAT at 17.5 % is added to this cost.

Work out 17.5% of £2.80 .

(c) p [2]



Each day Sam records the types of birds visiting his bird feeder while he is having breakfast.

Here is Tuesday's list.

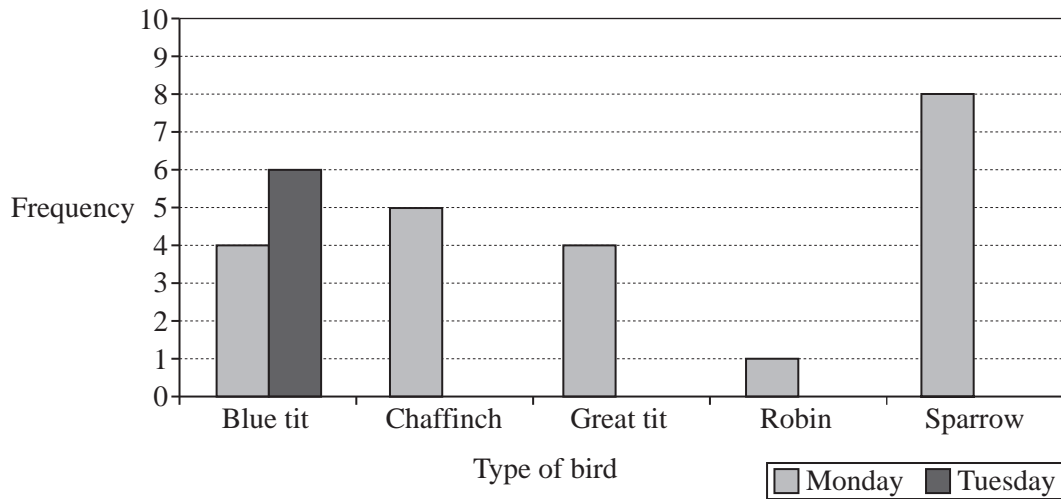
Great tit	Chaffinch	Sparrow	Great tit	Sparrow
Blue tit	Blue tit	Robin	Blue tit	Great tit
Sparrow	Sparrow	Chaffinch	Sparrow	Blue tit
Blue tit	Chaffinch	Sparrow	Blue tit	Sparrow

(a) Complete the frequency table.

Type of Bird	Tally	Frequency
Blue tit		
Chaffinch		
Great tit		
Robin		
Sparrow		

[2]

(b) Complete the bar chart to show his results for Monday and Tuesday.



[1]

(c) How many birds were recorded on Monday?

(c) [2]

(d) Which type of bird did Sam see the least number of times during the two days?

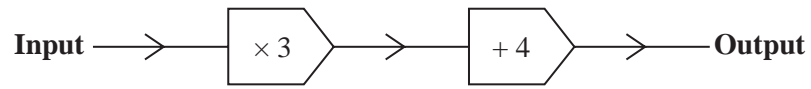
(d) [1]

(e) After collecting results for a month, Sam works out that the probability that the next bird to visit the feeder will be a Chaffinch is 0.2.

What is the probability that the next bird will **not** be a Chaffinch?

(e) [1]

13 Here is a number machine.



(a) What is the **output** when the **input** is 2?

(a) [1]

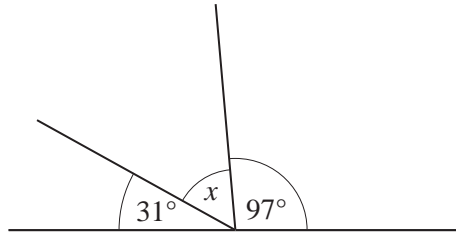
(b) What is the **output** when the **input** is -5 ?

(b) [1]

(c) What is the **input** when the **output** is 25?

(c) [2]

14



Not to scale

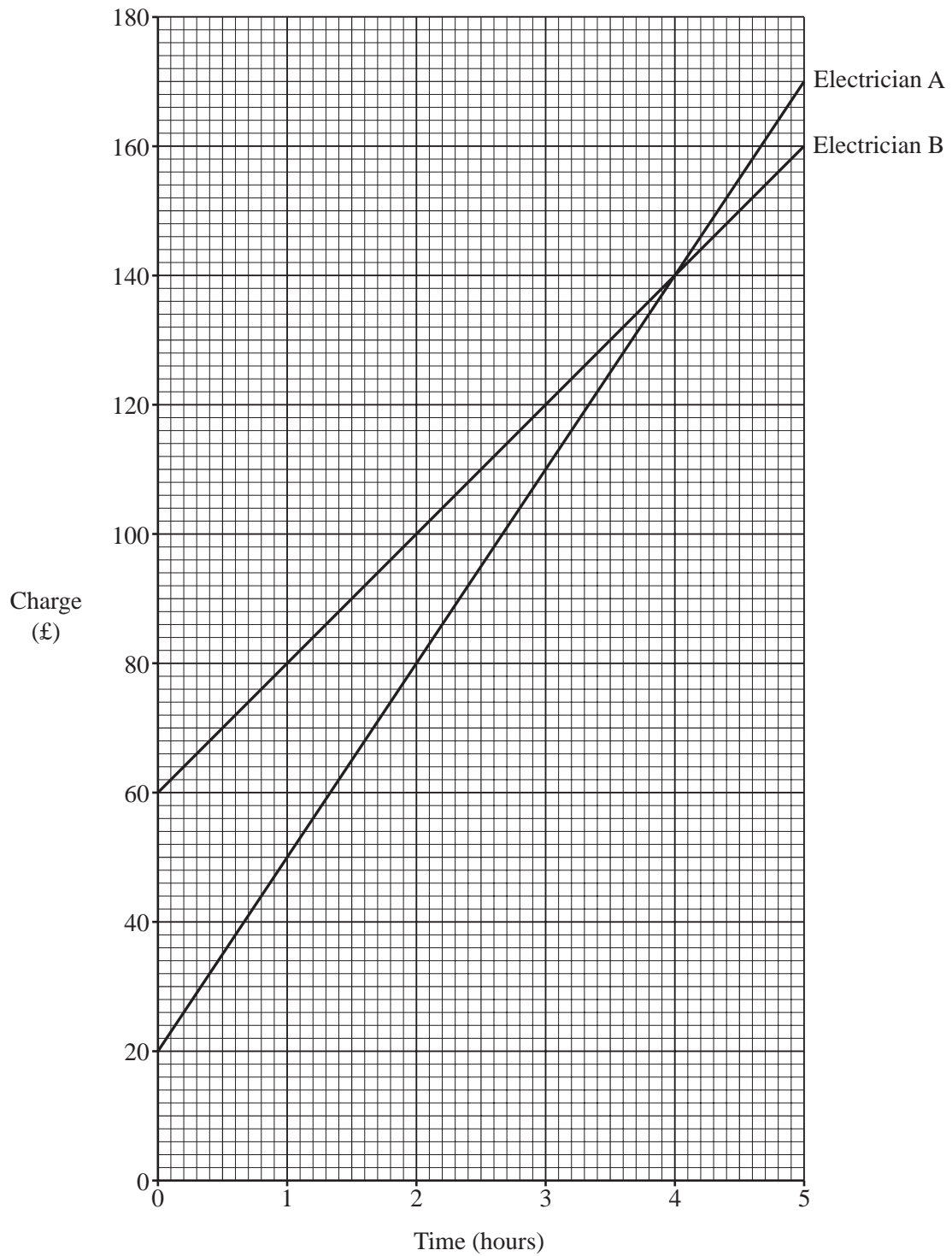
Calculate angle x .
Give a reason for your answer.

$x = \dots\dots\dots^\circ$ because

.....

..... [2]

- 15 Katy asked for details of charges from two different electricians. She drew two lines on a grid to represent their charges for jobs up to 5 hours.



(a) Fill in the information for electrician B to complete the table of charges.

	Call out fee	Rate per hour
Electrician A	£20	£30
Electrician B	£	£

[2]

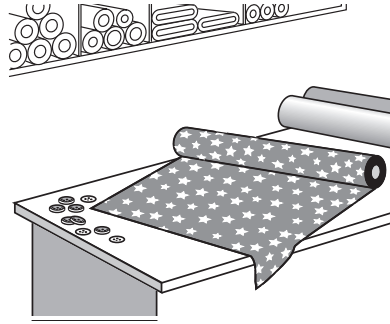
(b) For what length of job do the two electricians charge the same amount?

(b) hours [1]

(c) Katy's job will take 2 hours to complete.

Which electrician is cheaper and by how much?

(c) Electrician by £..... [2]



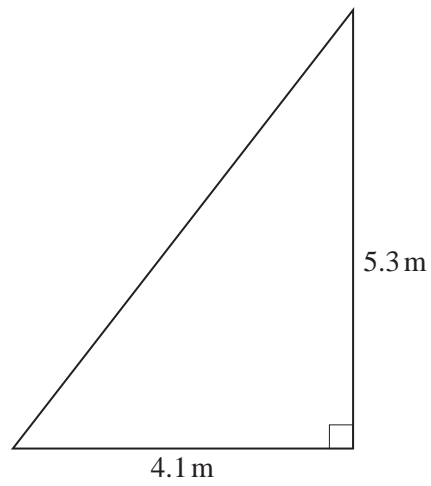
Jan goes shopping to buy the things she needs to make a dress.

Work out the three missing values in her bill.

DRESS MATERIALS		
8 buttons	@ £1.45 each	£.....
2.6 m of fabric	@ per metre	£.....
Total cost		£ 20 . 83

[4]

17 The diagram shows a plot of land.



**Not to
scale**

A fence is to be put along the perimeter of the plot.

What is the length of the fence?

..... m [4]

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