

OXFORD CAMBRIDGE AND RSA EXAMINATIONS

General Certificate of Secondary Education

MATHEMATICS SPECIFICATION A/B/C 1962/08/2345/2318

OPTION B (OCR-MARKED TASKS)

1969/05

FOUNDATION/INTERMEDIATE TASK A

F/I TASK A

TO BE COMPLETED BY 19 APRIL 2006

Additional materials:

- Answer booklet
- Electronic calculator
- Geometrical instruments

INSTRUCTIONS TO CANDIDATES

Write your name, Centre number and candidate number in the spaces provided on the answer booklet and in the spaces on any graph or squared paper used.

Write your answers on the answer booklet and any graph or squared paper provided.

If appropriate you may fasten notes and computer printout securely to the answer booklet, graph and squared paper with the answer booklet, graph and squared paper **on top of** any such attached materials.

INFORMATION FOR CANDIDATES

You may use an electronic calculator.

GUIDANCE FOR CANDIDATES

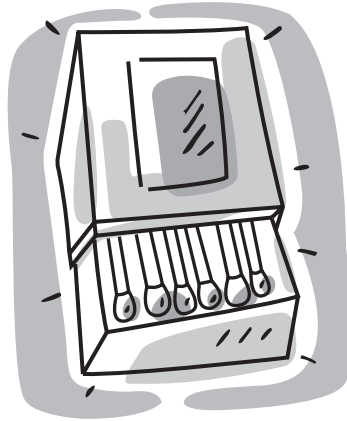
To gain the highest mark possible, you should attempt to include as many of the following features as possible.

- | | |
|----------------------------|--|
| Plan the task | <ul style="list-style-type: none">• Use a clear method.• Break the task into stages.• Write down questions which, as you answer them, help you find out more about the work.• Explore as many aspects of the task as possible, explaining why and how you do this.• Develop the task into new situations and explore these thoroughly. |
| Explain your work | <ul style="list-style-type: none">• Use words, suitable tables, diagrams, graphs, calculations, etc.• Link as much of your work together as possible, explaining why you chose the tables and charts you used and rejected others.• Use algebra or symbols to give efficient and clear explanations.• Present results and conclusions in the clearest way possible. |
| State your findings | <ul style="list-style-type: none">• Show how patterns have been used and test conclusions.• State general results in words and explain what these mean.• Write formulae where appropriate and explain how they have been found from the situations you have explored.• Prove or justify the results using efficient mathematical methods.• Develop new results from work previously done and use clear reasoning to prove or justify conclusions. Make sure your reasoning is accurate and draws upon the evidence you have presented. |

This question paper consists of 2 printed pages, 4 pages of blank grids and 2 blank pages.

OCR-marked Task [AO1]
Suitable for Foundation and Intermediate Tiers

Matchstick Patterns



Gemma is making patterns with matchsticks. Here are some of the patterns she has made.

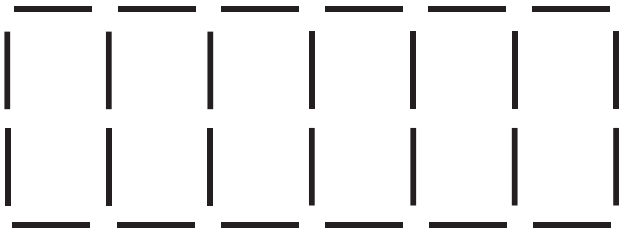
Picture
A



Picture
B

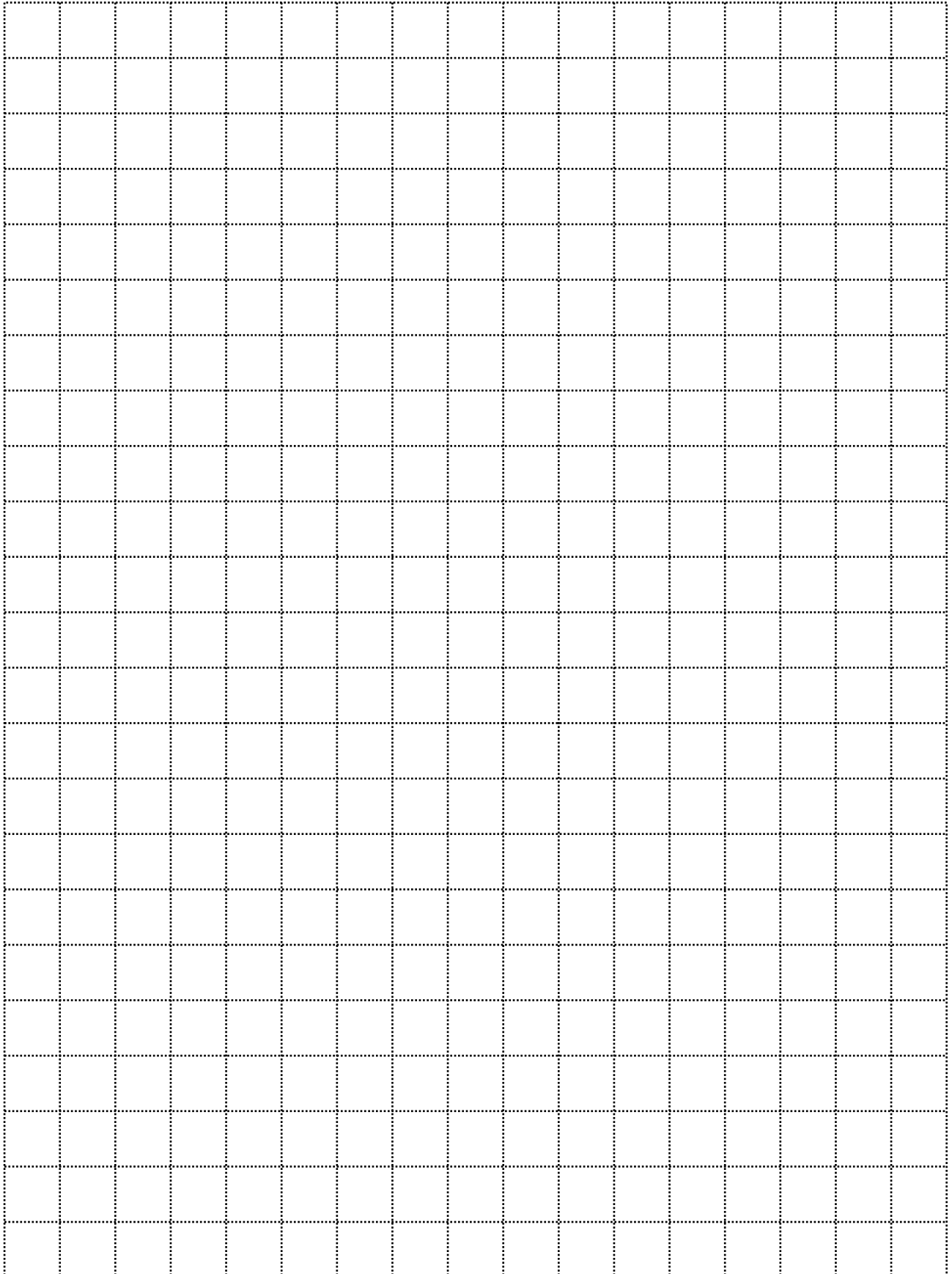


Picture
C



Picture A shows a pattern 1 matchstick wide.
Picture B shows a pattern 3 matchsticks wide.
Picture C shows a pattern 6 matchsticks wide.

- 1 Gemma used 6 matchsticks to make the pattern in Picture A.
How many matchsticks are used to make each of the patterns shown in Pictures B and C?
- 2 Gemma's patterns are all 2 matchsticks high.
Investigate the link between the width of each pattern and the number of matchsticks used to make it.
- 3 Extend your investigation to other patterns made with matchsticks, making clear the rules and methods that you use.





RECOGNISING ACHIEVEMENT

Centre Number

Candidate Number

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Candidate Name

Detach this sheet.

Read the Instructions on the front page of your question paper. Use both sides of this sheet.

MATHEMATICS SPECIFICATION A/B/C Pilot

1962/08/2345/2318/1969/05 OPTION B

