OCR
RECOGNISING ACHIEVEMENT

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GENERAL CERTIFICATE OF SECONDARY EDUCATION **J512/06**
MATHEMATICS SPECIFICATION A/B/C **B254**
OPTION B (OCR MARKED TASKS) **B266**

HIGHER TASK A

TO BE COMPLETED BY 19 APRIL 2008

Additional materials: Answer booklet
Electronic calculator
Geometrical instruments

CUP/T38287

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.

ADVICE TO CANDIDATES

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

Plan the task
- 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
- 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
- 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 document consists of **2** printed pages and **2** pages of blank grids.

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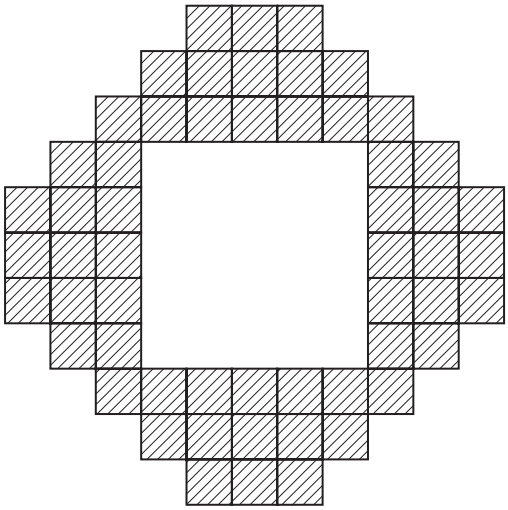
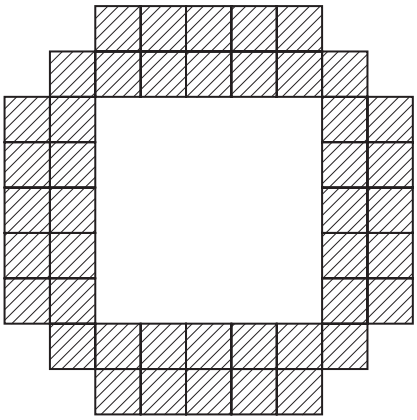
OCR Marked Tasks AO1
Suitable for Higher Tier
(May be used for Foundation Tier)

Mirrors

3-row design



2-row design



Sasha uses tiles to make borders for square mirrors. The picture shows two possible designs for a 5 by 5 mirror surrounded with 1 by 1 tiles.

1 Choose one of these border designs.

(a) What is the total number of 1 by 1 tiles used to make a border for

(i) a 5 by 5 mirror,

(ii) a 7 by 7 mirror?

(b) Investigate the total number of 1 by 1 tiles that are needed to make borders for different sized square mirrors.

2 Investigate 'borders' of objects, making clear the rules and methods that you use.

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Centre Number					Candidate Number				

Detach this sheet. Candidate Name .....

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

MATHEMATICS SPECIFICATION A/B/C **J512/06/B254/B266 OPTION B**

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