

90153



NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

For Supervisor's use only

Level 1 Mathematics, 2008

90153 Use geometric reasoning to solve problems

Credits: Two

9.30 am Monday 24 November 2008

Check that the National Student Number (NSN) on your admission slip is the same as the number at the top of this page.

You should answer ALL the questions in this booklet.

You should show ALL working.

If you need more space for any answer, use the page(s) provided at the back of this booklet and clearly number the question.

Check that this booklet has pages 2–7 in the correct order and that none of these pages is blank.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

<i>For Assessor's use only</i>		Achievement Criteria	
Achievement		Achievement with Merit	
		Achievement with Excellence	
Use geometric reasoning to solve problems.	<input type="checkbox"/>	Use, and state, geometric reasons in solving problems.	<input type="checkbox"/>
		Solve an extended geometrical problem.	<input type="checkbox"/>
Overall Level of Performance		<input type="checkbox"/>	

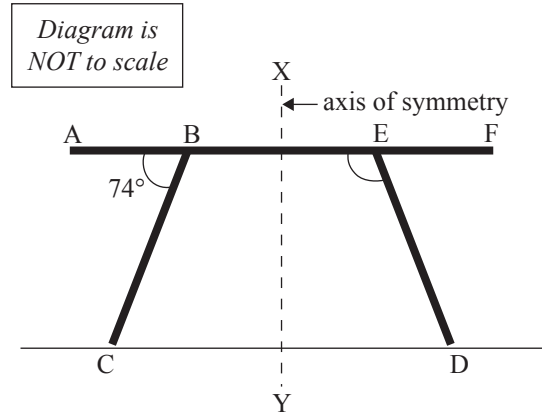
You are advised to spend 25 minutes answering the questions in this booklet.

To achieve merit you must give reasons for your answers.

QUESTION ONE

Bob's trestle is shown in the diagram.

ABEF is a straight line.
 XY is an axis of symmetry.
 Angle ABC = 74°.



Calculate the size of angle AED, giving reasons for your answers.

Calculations	Reasons
_____	_____
_____	_____
_____	_____
_____	_____

Angle AED = _____ °

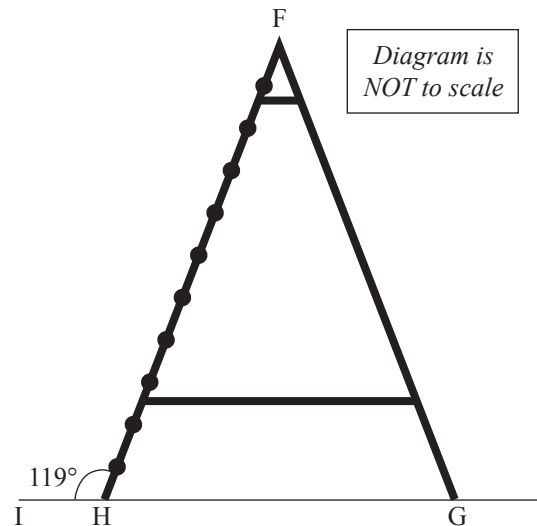
QUESTION TWO

Bob's step-ladder is shown in the diagram.

Angle IHF = 119°.

HF = GF.

Calculate the size of angle HFG, giving reasons for your answers.



Calculations	Reasons
_____	_____
_____	_____
_____	_____
_____	_____

Angle HFG = _____ °

QUESTION THREE

The diagram shows a rectangular stained-glass window, JKLM.

One of the pieces of glass in the window, PQRST, is a regular pentagon.

Calculate the size of angle LRS, giving reasons for your answers.

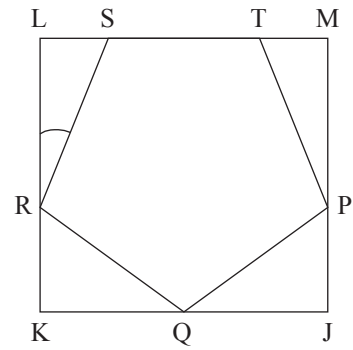


Diagram is NOT to scale

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Calculations

Reasons

_____	_____
_____	_____
_____	_____
_____	_____

Angle LRS = _____ °

QUESTION FOUR

In the diagram, ABCD is a semicircle, centre, O.

EBFO is a rhombus.

BF is parallel to CD.

Angle EBF = 59°.

Calculate the size of angle COD.

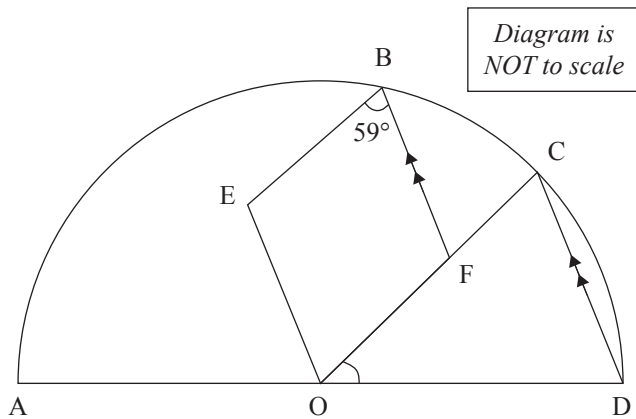


Diagram is NOT to scale

You must give a geometric reason for each step leading to your answer.

Angle COD = _____ °

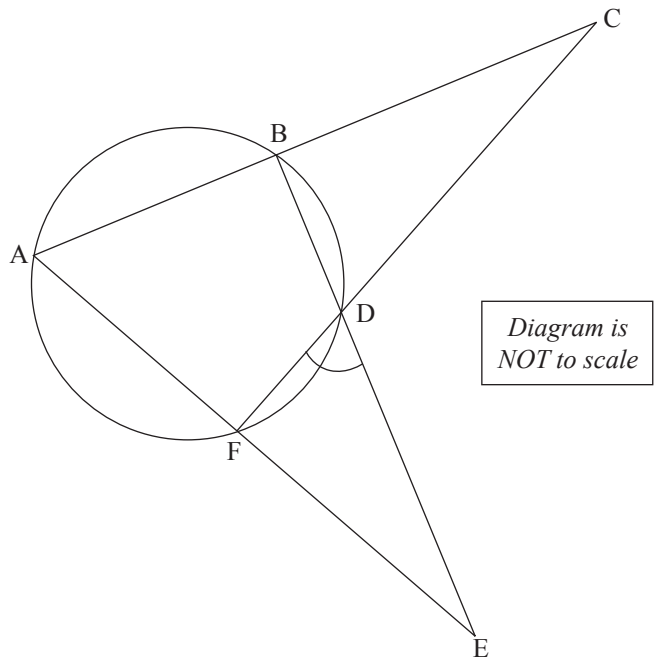
QUESTION SIX

ABE and ACF are two triangles.

Angle BCD = 28° .

Angle DEF = 36° .

Find the size of angle FDE.



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You must give a geometric reason for each step leading to your answer.

Angle FDE = _____^o

