2

90287

902870

NZQA

NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

For Supervisor's use only

Level 2 Mathematics, 2009

90287 Use coordinate geometry methods

Credits: Two
9.30 am Monday 16 November 2009

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

Make sure you have the Formulae Sheet L2-MATHF.

Answer ALL the questions in this booklet.

The questions in this paper are NOT in order of difficulty. Attempt all questions or you may not provide enough evidence to achieve the required standard.

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 2–8 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.

For Assessor's use only	**Achievement Criteria**		
Achievement	**Achievement with Merit**	**Achievement with Excellence**	
Use coordinate geometry methods.	Solve problems involving coordinate geometry methods.	Solve extended problems involving coordinate geometry methods.	
Overall Level of Performance			

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

Assessor's use only

QUESTION ONE

D is the point (–3,4)
and E is the point (5,0).

(a) Find the midpoint of DE.

(b) Find the length of DE.

(c) Point F (k,–9) lies on the line drawn through the points D and E.

Find the value of k.

Assessor's use only

(d) D is the point (–3,4) and E is the point (5,0).

Triangle DEG is an **isosceles** triangle, where G is the point (a,$2a$).

DG = EG

The area of triangle DEG is 20.

Find the coordinates of the two possible positions for G.

Assessor's use only

QUESTION TWO

Assessor's use only

(a) (i) Find the equation of the line parallel to $y = 3x - 1$ that passes through the point P (4,–2).

(ii) Find the equation of the line perpendicular to $y = 3x - 1$ at the point Q (1,2).

(b) Three of the vertices of a parallelogram PQRS are P (4,–2), Q (6,–5), R (12,–3).

Find the gradient of the diagonal QS.

Assessor's use only

(c) Find the shortest distance between the line $y = 3x - 1$ and P (4,–2).

Assessor's use only

Extra paper for continuation of answers if required.
Clearly number the question.

Assessor's use only

Question number

90287