## The Line (Q 2, Paper 2)

## Lesson No. 7: Translations \& Symmetries

## 2006

2 (b) $L$ is the line $3 x+2 y+c=0$.
(i) $(3,-1)$ is a point on $L$. Find the value of $c$.
(ii) The line $K$ is parallel to $L$ and passes through the point $(-2,5)$. Find the equation of $K$.
(iii) The lines $L$ and $K$, together with the line $x=3$ and the $y$-axis, form a parallelogram. Find the co-ordinates of the vertices of the parallelogram.

## 1998

2 (b) $a(2,-1), b(-2,3), c(-1,-1)$ and $d(4,-6)$ are points.
(i) Show that $a b$ is parallel to $c d$.
(ii) Investigate if $a b c d$ is a parallelogram.

Give a reason for your answer.

## 1997

2 (c) $K$ is the line which contains the points $a(0,4)$ and $b(3,0)$.
Find the equation of $K$.
$N$ is the line which is perpendicular to $K$ and which contains the origin.
Find the equation of $N$.
Investigate if $b$ is the image of $a$ under the axial symmetry in $N$.

## Answers

2006
2 (b) (i) $c=-7$
(ii) $3 x+2 y-4=0$
(iii) $(0,2),\left(3,-\frac{5}{2}\right),\left(0, \frac{7}{2}\right),(3,-1)$

19982 (b) (ii) It is not a parallelogram because $a d$ is not parallel to $b c$.
19972 (c) $K: 4 x+3 y-12=0 ; N: 3 x-4 y=0$; No

