## THE LINE (Q 2, PAPER 2)

## 1998

2	(a)	The point (-3, 4) is on the line whose equation is $5x + y + k = 0$ . Find the value of k.
	(b)	<i>a</i> (2, −1), <i>b</i> (−2, 3), <i>c</i> (−1, −1) and <i>d</i> (4, −6) are points. (i) Show that <i>ab</i> is parallel to <i>cd</i> .
		<ul><li>(ii) Investigate if <i>abcd</i> is a parallelogram.</li><li>Give a reason for your answer.</li></ul>
	(c)	The equation of the line L is $x - 2y + 10 = 0$ .
		L contains the point $t(2, 6)$ .
		(i) Find the equation of the line $N$ which passes through $t$ and which is perpendicular to $L$ .
		<ul><li>(ii) The line <i>N</i> cuts the <i>x</i>-axis at <i>r</i> and it cuts the <i>y</i>-axis at <i>s</i>.</li><li>Calculate the ratio</li></ul>
		$\frac{ rt }{ ts }$ .
		Give your answer in the form $\frac{p}{q}$ , where p and q are whole numbers.

Answers 2 (a) k = 11(b) (ii) It is not a parallelogram because *ad* is not parallel to *bc*. (c) (i) 2x + y - 10 = 0 (ii)  $\frac{3}{2}$