The Line (Q 2, Paper 2)

Lesson No. 6: Equation of a Line II

2005

2 (b) L is the line $3x - 4y + 12 = 0$.
L intersects the x-axis at a and the y-axis at b.
(i) Find the co-ordinates of a and the co-ordinates of b.

(ii) K is the line that passes through b and is perpendicular to L.
Show L and K on a co-ordinate diagram.

(iii) Find the equation of K.

(iv) The point $(2t, 3t)$ is on the line K. Find the value of t.

(c) The lines $2x - y + 3 = 0$ and $4x - y + k = 0$ intersect at a point.
(i) Find, in terms of k, the co-ordinates of the point of intersection of the lines.

(ii) For what value of k is the point of intersection on the y-axis?

2003

2 (c) L is the line $3x + 2y + 12 = 0$.
K is the line that passes through the point (7, 3) and is perpendicular to L.
Find the equation of K and hence find the point of intersection of K and L.

2002

2 (a) Find the co-ordinates of the point of intersection of the line and the line $4x + y = 5$ and $3x - 2y = 12$.

1998

2 (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.

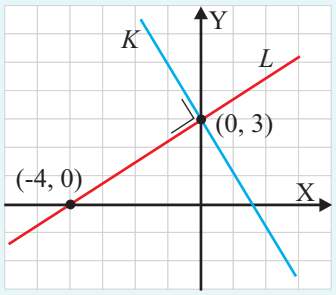
(ii) The line N cuts the x-axis at r and it cuts the y-axis at s.
Calculate the ratio

$$\frac{|rt|}{|ts|}.$$

Give your answer in the form $\frac{p}{q}$, where p and q are whole numbers.

ANSWERS

2005 2 (b) (i) $a(-4, 0), b(0, 3)$ (ii)



(iii) $4x+3y-9=0$

(iv) $t=\frac{9}{17}$

(c) (i) $\left(\frac{3-k}{2}, 6-k\right)$

(ii) $k=3$

2003 2 (c) $2x-3y-5=0$, $(-2, -3)$

2002 2 (a) $(2, -3)$

1998 2 (c) (i) $2x+y-10=0$ (ii) $\frac{3}{2}$