## The Line (Q 2, Paper 2)

## 1999

2 (a) The point $(k, 1)$ lies on the line $4 x-3 y+15=0$.
Find the value of $k$.
(b) $p(4,3), q(-1,0)$ and $r(10,3)$ are three points.
(i) Find the slope of $p q$.
(ii) Find the equation of the line through $r$ which is parallel to $p q$.
(iii) Find the equation of the line which is perpendicular to $p q$ and which contains the origin.
(c) $a(0,5), b(x, 10)$ and $c(2 x, x)$ are three points.

Find $|a b|$ in terms of $x$.
If $|a b|=|b c|$, calculate the two possible values of $x$.

## Answers

2
(a) $k=-3$
(b) (i) $\frac{3}{5}$
(ii) $3 x-5 y-15=0$
(iii) $5 x+3 y=0$
(c) $|a b|=\sqrt{x^{2}+25} ; x=5,15$

