Line (Q 3, Paper 2)

Lesson No. 1: The Basics

2006

3 (a) Show that the line containing the points $(3, -6)$ and $(-7, 12)$ is perpendicular to the line $5x - 9y + 6 = 0$.

2005

3 (a) The line L_1: $3x - 2y + 7 = 0$ and the line L_2: $5x + y + 3 = 0$ intersect at the point p. Find the equation of the line through p perpendicular to L_2.

3 (b) The line K passes through the point $(-4, 6)$ and has slope m, where $m > 0$.

(i) Write down the equation of K in terms of m.

(ii) Find, in terms of m, the co-ordinates of the points where K intersects the axes.

(iii) The area of the triangle formed by K, the x-axis and the y-axis is 54 square units. Find the possible values of m.

2002

3 (a) $a(-1, 4)$ and $b(5, -4)$ are two points. Find the equation of the perpendicular bisector of $[ab]$.

2001

3 (a) The line B contains the points $(6, -2)$ and $(-4, 10)$. The line A with equation $ax + 6y + 21 = 0$ is perpendicular to B. Find the value of the real number a.

Answers

2005 3 (a) $x - 5y + 11 = 0$

3 (b) (i) $mx - y + 4m + 6 = 0$ (ii) $(0, 4m + 6)$, $(\frac{-4m-6}{m}, 0)$ (iii) $\frac{3}{4}$, 3

2002 3 (a) $3x - 4y - 6 = 0$

2001 3 (a) $a = -5$