

**LINE (Q 3, PAPER 2)**

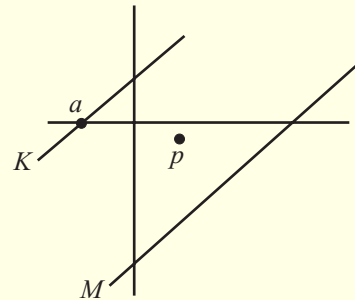
**LESSON NO. 4: PERPENDICULAR DISTANCE**

**2004**

- 3 (b) (i) Calculate the perpendicular distance from the point  $(-1, -5)$  to the line  $3x - 4y - 2 = 0$ .
- (ii) The point  $(-1, -5)$  is equidistant from the lines  $3x - 4y - 2 = 0$  and  $3x - 4y + k = 0$ , where  $k \neq -2$ . Find the value of  $k$ .

**2003**

- 3 (b)  $K$  is the line  $3x - 4y + 9 = 0$ . The point  $a(-3, 0)$  is on  $K$ .  
The line  $M$  is parallel to  $K$ . The point  $p(2, -1)$  is midway between  $K$  and  $M$ .
- (i) Find the equation of  $M$ .
- (ii) Calculate the distance between  $K$  and  $M$ .
- (iii) Calculate the measure of the acute angle between  $ap$  and  $K$ . Give your answer correct to the nearest degree.
- (iv)  $b(x, y)$  is a point on  $K$  such that  $|ab| = 15$  and  $x > 0$ . Find the value of  $x$  and the value of  $y$ .



**ANSWERS**

**2004** 3 (b) (i) 3 (ii)  $k = -32$

**2003** 3 (b) (i)  $3x - 4y - 29 = 0$  (ii)  $\frac{38}{5}$  (iii)  $48^\circ$  (iv)  $x = 9, y = 9$