THE LINE (Q 2, PAPER 2) 1996 2 (a) The line L contains the points p(3, -1) and q(0, 2). (i) Find the slope of *L*. (ii) Find the equation of L. (iii) *L* intersects the *x*-axis at the point *r*. Find the coordinates of *r*. (iv) Calculate the ratio area of triangle rpo area of triangle pqo where o is the origin. (b) The equation of the line *M* is y-4x-c=0. *M* contains the point p(1, 6). (i) Find the value of *c*. (ii) The origin is the midpoint of [pq]. Find the equation of the line *K* if *K* is parallel to *M* and *K* contains the point *q*. (iii) Find the equation of the line L if L is perpendicular to M and L contains the point q.

| Answers | | | |
|---------|-----------------|----------------------------------|------------------------------------|
| 2 | (a) (i) -1 | (ii) <i>L</i> : $x + y - 2 = 0$ | (iii) <i>r</i> (2, 0) |
| | (iv) 1:3 | | |
| | (b) (i) $c = 2$ | (ii) <i>K</i> : $4x - y - 2 = 0$ | (iii) <i>L</i> : $x + 4y + 25 = 0$ |