

THE LINE (Q 2, PAPER 2)

2000

- 2 (a) Find the coordinates of the midpoint of the line segment which joins the points $(2, -3)$ and $(-8, -6)$.
- (b) $a(-2, -1)$, $b(1, 0)$ and $c(-5, 2)$ are three points.
- (i) Show that $|ab| = \sqrt{10}$.
- (ii) Find $|bc|$.
- (iii) Hence, find the ratio $|ab| : |bc|$.
Give your answer in the form $m:n$ where m and n are whole numbers.
- (c) (i) The line L has equation $3x - 4y + 20 = 0$.
 K is the line through $p(0, 5)$ which is perpendicular to L .
Find the equation of K .
- (ii) L cuts the x -axis at the point t .
 K cuts the x -axis at the point r .
Calculate the area of the triangle ptr . Give your answer as a fraction.

ANSWERS

- 2 (a) $(-3, -\frac{9}{2})$
- (b) (i) $\sqrt{40} = 2\sqrt{10}$ (ii) 1:2
- (c) (i) $4x + 3y - 15 = 0$ (ii) $\frac{625}{24}$