# THE LINE (Q 2, PAPER 2)

#### LESSON NO. 8: AREA OF A TRIANGLE

#### 2007

- 2 (c) a(-4, 3), b(6, -1) and c(2, 7) are three points.
  - (i) Find the area of triangle *abc*.
  - (ii) *abcd* is a parallelogram in which [*ac*] is a diagonal.Find the co-ordinates of the point *d*.

## 2006

- 2 (a) a(-2, 6) and b(4, 3) are two points.
  - (i) Plot *a* and *b* on a co-ordinate diagram.
  - (ii) From your diagram, write down the co-ordinates of the point at which the line *ab* cuts the *y*-axis.
  - (iii) Find the slope of *ab*.
  - (iv) Calculate the area of the triangle abc, where the co-ordinates of c are (1, -3).

#### 2004

- 2 (b) a(-1, -2), b(3, 1), c(0, 4) are three points.
  - (i) Find the length of [*ab*].
  - (ii) Calculate the area of the triangle *abc*.
  - (iii) The line L is parallel to ab and passes through the point c. Find the equation of L.
  - (iv) Show that the point d(-4, 1) is on L.
  - (v) Investigate whether *abcd* is a parallelogram.

#### 2002

- 2 (b) The line *L* has equation 4x 5y = -40.
  - a(0, 8) and b(-10, 0) are two points.
  - (i) Verify that *a* and *b* lie on *L*.
  - (ii) What is the slope of *L*?
  - (iii) The line *K* is perpendicular to *L* and it contains *b*. Find the equation of *K*.
  - (iv) *K* intersects the *y*-axis at the point *c*. Find the co-ordinates of *c*.
  - (v) *d* is another point such that *abcd* is a rectangle. Calculate the area of *abcd*.
  - (vi) Find the co-ordinates of *d*.

#### 2001

- 2 (b) a(4, 2), b(-2, 0) and c(0, 4) are three points.
  - (i) Prove that  $ac \perp bc$ .
  - (ii) Prove that |ac| = |bc|.
  - (iii) Calculate the area of the triangle *bac*.
  - (iv) The diagonals of the square *bahg* intersect at *c*.Find the co-ordinates of *h* and the co-ordinates of *g*.
  - (v) Find the equation of the line bc and show that h lies on this line.

### 2000

- 2 (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.

#### **1997**

2 (b) *L* is the line x-2y+2=0. *M* is the line 3x+y-8=0. Find the co-ordinates of *p*, the point of intersection of *L* and *M*.

L and M cut the x-axis at q and r, respectively.

Find the area of triangle *pqr*.



