**GATITU MIXED SECONDARY SCHOOL**

 **MATHEMATICS FORM FOUR C.A.T 1 2ND TERM 2012**

 **1HOUR**

1.A plane leaves x (41.50N, 36.40W ) at 900am and fires due North to airport y on latitude 53.20 N.

 a. Calculate the distance covered by the plane in kms (3mks)

 b.After stopping for 30minutes to refuel at Y, the plane flies due east to airport Z, 2500km from Y. Find

 i.The position of Z (3mks)

ii.The time the plane lands at Z if its speed is 500km/h (4mks )

 ( II =22/7 R=6370)

2.The equation of a curve is Y = 2x2 -4x +5

 a.Determine the turning point of the curve (2mks )

 b. Show that the turning point is a minimal (2mks )

 c.The curve passes at the point P(2,5). Find

 i. the equation of the trancent to the curve at P. (3mks )

 ii. the equation of the normal to the curve at P (3mks)

3. The transformations T1 and T2 are represented by

 T1 (2 0) and T2 (1 0 )

 (0 2) (0 -1)

 a. A single transformation T can replace T1 followed by T2. Write down the matrix for T (1mk)

 b. The points A”B”C” are the images of A(4,4 ) B (1,1 ) and C (4,1 ) under transformation T. Write down the coordinates of A”B’ and C” (2mks )

 c. Write down the coordinates of A’B’C’ the images under transformation T1  (1mk)

 d. A”B”C” are the images of A’B’C’ T2. Write down the coordinates of A”B’C” (1mk)

 e. On the grid paper provided draw the triansles ABC, A’ B’ C’ and A”B”C” (3mks)

 F.Describe fully the transformations T1 and T2  (2mks)