**ISLAMIC UNIVERSITY IN UGANDA**

**BACHALOR OF EDUCATION, EXTERNAL**

**MATHEMATICS COURSE WORK**

SECTION A; TRIGONOMETRY

1. a) Write in terms of a cute angle of trigonometry ratios

b) i) Using the identity sin2x+ cos2 α=1, show that

1. cos2α+1=co sec2α

ii) Show that +=cosec A

iii) Solve the equation 2 cos2-1=0 for 0 360

c) If =4/3, find the values of

i)

1. ii) sec2
2. sec

2. a) Show that i)cos[

ii. + =2secx

b).Simplify cosx - cos x x

ii). Tan x +cosec x

**SECTION B : VECTORS**

1. a) Give A=2i + ͜͜j – 3 ͜k . Find the unit vector of vector A

b) If ͜A = ͜i - ͜j -4 ͜k

͜B =-2 ͜i +4 ͜j – 3 ͜k

͜C = i + 2 ͜j - ͜k

(c) Find a unit vector parallel to 3A-2+4C

1. a) If ͜a=2 ͜i , ͜b=5 ͜j and ͜c= ͜j + ͜j

Ii) ͜b ͜c

iii) ͜c ͜a

b) Find ͜A ͜B if ͜A =2i + 4͜j and ͜B =2i + 2͜k hence what is the relationship between ͜A and ͜B

c) If ͜a =3i –j +2͜k and b= mi– 2j -3͜k .Find the value of small m for which ͜a and ͜b are perpendicular.

3. a) Find the moduli [length] of the following vectors

I) ͜a = 6 ͜i +8j

ii) ͜b=

iii) ͜c =2 ͜i +3 ͜j

b) PQRS is a quadrilateral P[1, -2] ,Q[4 ,-1] ,R[5 ,2] and S[2 ,1] show that the quadrilateral is a rhombus