**NAME :** OKIEMUTE WATERWAY

**DEPARTMENT**: CIVIL ENGINEERING

**MATRIC NO**: 17/ENG03/056

**COURSE**: ENG281 [ENGINEERING MATHEMATICS}

ASSIGNMENT

The hypotenuse of a right angled triangle is denoted as C, as the other two sides are denoted as **a & b**. If the possible error of measuring each of a and b is ± 1.5%. Find the maximum possible error in calculating;

1. The area of the triangle
2. The length of the hypotenuse

**Solution**

a).

c

a

b

Area of triangle =

A =

Let A = (a, b)

=

=

dA = \* da + \* db

\* + \*

+

) + ( )

+ )

(0.015 + 0.015)

0.003

Recall A =

dA = 0.003A

b).

c =

=( )1/2

Let c = ( a, b)

= a( )-1/2

=

= b( ) -1/2

=

dc = \* da + \* db

dc = ( ) + ( )

\* ( ) + \* ( )

± ( + )

± (0.015 + 0.015)

± 0.015()

± \* 0.015

=± 0.015c