***NAME :*** *OSAYUKI BENJAMIN*

***DEPARTMENT****: CHEMICAL ENGINEERING*

***MATRIC NO****: 17/ENG01/005*

***COURSE****: ENG281 [ENGINEERING MATHEMATICS}*

*ASSIGNMENT*

*The hypotenus 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*