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***MATRIC NO****: 17/ENG05/007*

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

***ENGINEERING MATHEMATIC 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***