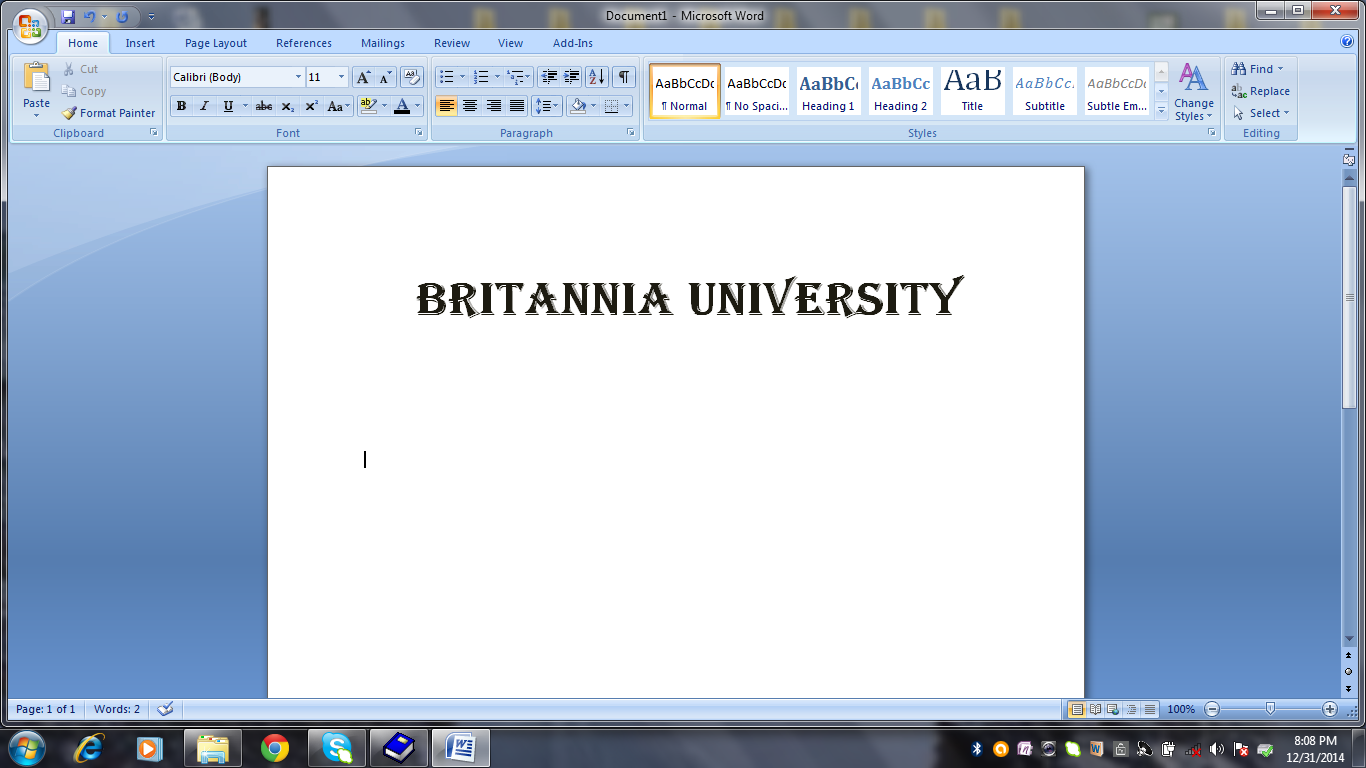


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**Course title:** Numerical Methods.

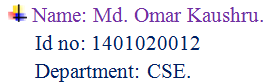
* **Lab report on:**

1. A c program to implements false position method to find the root of a specific function.
2. A c program to implements Newton-Raphson method to find the root of a specific function.



Date of Submission: 09-03-2016

Submitted by:

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* A c program to implements false position method to find the root of a specific function.

#include <stdio.h>

#include <math.h>

#include <stdlib.h>

double fu(double e,double f, double g, double h, double i, double j, double k)

{

return f\*e\*e\*e\*e\*e+g\*e\*e\*e\*e+h\*e\*e\*e+i\*e\*e+j\*e+k;

}

int main()

{

double x, y =.000001,z,a,b,l,m,c,n,o,p,q;

printf("\nEnter the value for x^5+x^4+x^3+x^2+x+q:\n\t\t ");

scanf("%lf %lf %lf %lf %lf %lf", &l, &m, &n, &o, &p, &q);

printf("\n Enter two real number for a & b: ");

scanf("%lf %lf", &a, &b);

do

{

x=a-((fu(a,l,m,n,o,p,q)/(fu(a,l,m,n,o,p,q)-fu(b,l,m,n,o,p,q)))\*(a-b));

z=fu( x, l, m, n, o, p, q);

if(z<0)

b=x;

else

a=x;

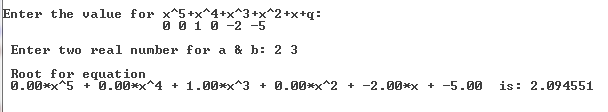
} while (fabs(z)>=y);

printf("\n Root for equation \n %.2lf\*x^5 + %.2lf\*x^4 + %.2lf\*x^3 + %.2lf\*x^2 + %.2lf\*x + %.2lf is: %lf\n\n", l, m, n, o, p, q, x);

return 0;

}

Sample Input/Output:



* A c program to implements Newton-Raphson method to find the root of a specific function.

#include <stdio.h>

#include <math.h>

#include <stdlib.h>

double fu(double e,double f, double g, double h, double i, double j, double k)

{

return f\*e\*e\*e\*e\*e+g\*e\*e\*e\*e+h\*e\*e\*e+i\*e\*e+j\*e+k;

}

double Derived\_fu(double e,double f, double g, double h, double i, double j, double k)

{

return f\*e\*e\*e\*e\*e+g\*e\*e\*e\*e+h\*e\*e\*e+i\*e\*e+j\*e+k;

}

int main()

{

double x, y =.000001,z1,z2,a,b,l,m,c,n,o,p,q,l1,m1,n1,o1,p1,q1;

printf("\nEnter the value for x^5+x^4+x^3+x^2+x+q:\n\t\t ");

scanf("%lf %lf %lf %lf %lf %lf", &l, &m, &n, &o, &p, &q);

printf("\nEnter the value for x^5+x^4+x^3+x^2+x+q of first derivative:\n\t\t ");

scanf("%lf %lf %lf %lf %lf %lf",&l1,& m1, &n1, &o1, &p1, &q1);

printf("\n Enter a real number for a ");

scanf(" %lf", &a);

do

{

x=a-((fu(a, l, m, n, o, p, q))/(Derived\_fu(a,l1, m1, n1, o1, p1, q1)));

z1=fu(x, l, m, n, o, p, q);

z2=Derived\_fu(x, l1, m1, n1, o1, p1, q1);

a=x;

}while((fabs(z1)>=y) || (fabs(z1)>=y));

printf("\n Root for equation \n %.2lf\*x^5 + %.2lf\*x^4 + %.2lf\*x^3 + %.2lf\*x^2 + %.2lf\*x + %.2lf is: %lf\n\n", l, m, n, o, p, q, x);

return 0;

}

Sample Input/Output:

