ΜΕΘΟΔΟΣ NEWTON - RAPHSON

```
#include <stdio.h>
#include <stdlib.h>
#include <math.h>
double dif(double,double);
double f(double);

int main()
{
	int N, M;
	M=1;
	printf("Dwse to megisto plithos twn epanalhpsewn\n");
	scanf ("%d", &N);
	double x0=3.0,r,err1=1.e-15,err2=1.e-20, h=1.e-10;

label:  r=x0-(f(x0)/dif(x0,h));

	if(fabs(r-x0)<=err1 || (fabs(f(r))<=err2))
	{
	printf("H lisi einai %lf meta apo %d epanalhpseis\n",r,M);
	}//end if

	else
	{

	x0=r;

	M=M+1;

	if (M>N) printf("Apotixia euresis lisis meta apo %d epanalipseis\n", N);

	else goto label;

	}//end else

	system(“pause”);
	return 0;

}//end main


double dif(double x, double h)
{
	double dfx=(f(x+h)-f(x))/h;
	return dfx;
}

double f(double x)
```

```
{
        double fx;
        fx=pow(x,3) - 2*x -5;
        return fx;
}
```