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Secant Correct

1 message

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```cpp
#include<bits/stdc++.h>
using namespace std;
//#define ex 2.718281828
#define f(x) (x*x*x)-(5*(x*x))-29
//#define f(x) ((0.65*x*x*x*x*x)-(9*x*x*x*x)+(45.4*x*x*x)-(88*x*x)+(82.3*x)-26)
//#define f(x) ((log(x*x)/log(exp(x*x)))-0.7)
double val(double X,double Y,double A, double B)
{
    return (X-((X-Y)/(A-B))*A);
}
double error(double X,double Y)
{
    return abs((X-Y)/X)*100;
}
double arr[100000];
double fr[100000];
int main()
{
    cout<<"Enter Initial Value: ";
    double x1,x2;
    cin>>x1>>x2;
    cout<<"Enter Error :";
    double err;
    int ete;
    cin>>err;
    cout<<"Maximum Number of Iteration: ";
    cin>>ete;
    double f1,f2;
    f1=f(x1);
    f2=f(x2);
    //cout<<(f1*f2)<<endl;
    if((f1*f2)>0)
    {
        cout<<"Solution Not Possible\n";
        return 0;
    }
    fr[0]=f1;
    fr[1]=f2;
    arr[0]=x1;
    arr[1]=x2;
    double ans=0;
    for(int i=2; ; i++)
    {
        double x=val(arr[i-1],arr[i-2],fr[i-1],fr[i-2]);
        fr[i]=f(x);
        //cout<<x<<endl;
        arr[i]=x;
        double erro=error(arr[i],arr[i-1]);
        //cout<<erro<<endl;
        ans=x;
        if(erro<=err || (i-1)==ete)
        {
            break;
```

```
        }
    }
    cout<<"\n\nFinal Root: "<<fixed<<setprecision(4)<<ans<<endl;
}
```