//Program for Bisection method

#include<iostream>

#include<math.h>

using namespace std;

#define f(x) ((x\*x\*x)-x-11)

int main()

{ long double a,b,x0,x=0.0;

if(f(x)<0.000000)

{ while(1)

{ if(f(x)>0.000000)

{ b=x--;

a=x;

break;

}

x++;

}

cout<<" A = "<<a<<" and B = "<<b;

for(int i=0;i<15;i++)

{ x0=((a+b)/2);

if(f(x0)<0.000000)

a=x0;

else

b=x0;

cout<<"\n Step = "<<i+1<<"\tRoot = "<<x0;

}

}

else

{ while(1)

{ if(f(x)<0.000000)

{ a=x--;

b=x;

break;

}

x++;

}

cout<<" A = "<<a<<" and B = "<<b;

for(int i=0;i<15;i++)

{ x0=((a+b)/2);

if(f(x0)<0.000000)

a=x0;

else

b=x0;

cout<<"\n Step "<<i+1<<" Root = "<<x0;

}

}

return 0;

}

