



Department of Computer Science and Engineering

.

Course Code : CSE- 4746

Course Title : Numerical Methods Lab

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➤ Uva 498

Code:

```
#include <iostream>
#include <sstream>

using namespace std;

int main() {
    string line;

    while (getline(cin, line)) {
        istringstream coeffStream(line);
        int coefficients[1000] = {0};
        int degree = 0;

        int coeff;
        while (coeffStream >> coeff) {
            coefficients[degree] = coeff;
            degree++;
        }

        getline(cin, line);
        istringstream valueStream(line);

        int x;
        bool first = true;
        while (valueStream >> x) {
            long long result = coefficients[0];
            for (int i = 1; i < degree; i++) {
                result = result * x + coefficients[i];
            }
            if (!first) {
                cout << " ";
            }
        }
```

```
    first = false;  
    cout << result;  
}  
  
cout << endl;  
}  
  
return 0;  
}
```

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Source

```
#include <bits/stdc++.h>

using namespace std;

int p, q, r, s, t, u;

double evaluate(double x) {
    return p * exp(-x) + q * sin(x) + r * cos(x) + s * tan(x) + t * x * x + u;
}

double binarySearch(double low, double high) {
    const double EPSILON = 1e-9;

    while (low + EPSILON < high) {
        double mid = (low + high) / 2;
        double result = evaluate(mid);

        if (result < 0) {
            high = mid;
        } else {
            low = mid;
        }
    }

    return (low + high) / 2;
}

int main() {
    while (cin >> p >> q >> r >> s >> t >> u) {
        if (evaluate(0) * evaluate(1) > 0) {
            cout << "No solution\n";
        } else {
            double solution = binarySearch(0, 1);
            printf("%.4f\n", solution);
        }
    }
}
```

```
    }  
  }  
  return 0;  
}
```