```
 1: //Kalli Bonin and Brian Chang
 2: //Question 1 - Finding Roots
 3:
 4: #include <iostream>
 5: #include <cmath>
 6: #include <cstdlib>
 7: #include <iomanip>
 8:
 9: using namespace std;
10:
11: int main()
12: {
13:
14:     //set lowestVal to much higher than the final answer
15:     double lowestVal = 100, root = 0;
16:
17:
18:     cout << "The roots are ";
19:
20:     for (double i = -5; i <= 5; i = i+0.0001)
21:     {
22:         //calculate the value of the function at i
23:         double function = (3*pow(i,5) + 11*pow(i,4) + 12*pow(i,3) - 7*i + 5);
24:
25:         //check to see if the value we are at now is closer than our last
26:         //lowest value
27:         if( abs(function) < abs(lowestVal) )
28:         {
29:             lowestVal = function;
30:             root = i;
31:         }
32:     }
33:
34:     //output our calculated root
35:     cout << root << endl;
36: }
37:
38: /*
39:     The roots are -2.09928
40:     --------------------------------
41:     Process exited after 0.06724 seconds with return value 0
42:     Press any key to continue . . .
43: */
```