Week 6 Programming Assignment 2

Write two overloaded functions `sum` as follows. The first function should take two double arguments and return their sum. The second function should take three double arguments and return their sum.

You should only submit the two functions. There will be invisible code which will test your functions. Specifically, we will put in the following main program

```cpp
int main(){
    double p,q,r,s,t; cin >> p >> q >> r >> s >> t;
    cout << sum(p,q) <<' '<<sum(r,s,t)<<endl;
}
```

You should not give the main program, just give the definitions of the function `sum`. You can also write this using default argument values. That is also acceptable.

**Sample Test Cases**

<table>
<thead>
<tr>
<th>Test Case</th>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case 1</td>
<td>21 22 23 24 25</td>
<td>43 72</td>
</tr>
<tr>
<td>Case 2</td>
<td>45 46 47 48 49</td>
<td>91 144</td>
</tr>
<tr>
<td>Case 3</td>
<td>138 139 140 141 142</td>
<td>277 423</td>
</tr>
<tr>
<td>Case 4</td>
<td>-148 149 150 -151 -152</td>
<td>1 -153</td>
</tr>
<tr>
<td>Test Case</td>
<td>Numbers</td>
<td>Result</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>5</td>
<td>65536 65536 -20 30 -10</td>
<td>131072 0</td>
</tr>
<tr>
<td>6</td>
<td>1 2 3 4 5</td>
<td>3 12</td>
</tr>
<tr>
<td>7</td>
<td>-3 2 9 34 -21</td>
<td>-1 22</td>
</tr>
<tr>
<td>8</td>
<td>34 21 56 43 45</td>
<td>55 144</td>
</tr>
<tr>
<td>9</td>
<td>922372036854775807 2 1844674407370</td>
<td>9.22337e+18 1.84467e+19</td>
</tr>
<tr>
<td>10</td>
<td>8.5 6.7 -10.5 -10.5 -10.5</td>
<td>15.2 -31.5</td>
</tr>
<tr>
<td>11</td>
<td>1.17549e-38 -0.00001e-38 3.40282e+3 8 0.00002e+38 0.00002 e+38</td>
<td>1.17548e-38 3.40284e+38</td>
</tr>
</tbody>
</table>

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

Sample solutions (Provided by instructor)

```cpp
#include <iostream>
#define repeat(x) for(int _iterator_i = 0, _iterator_limit = x; _iterator_i < _iterator_limit; _iterator_i++)

int main()
{
    double p, q, r, s, t;
    cin >> p >> q >> r >> s >> t;
    cout << sum(p, q) << ' ' << sum(r, s, t) << endl;
}
```

```cpp
#include <iostream>
#define repeat(x) for(int _iterator_i = 0, _iterator_limit = x; _iterator_i < _iterator_limit; _iterator_i++)

double sum(double s1, double s2, double s3=0){
    return s1+s2+s3;
}

int main(){
    double p, q, r, s, t;
    cin >> p >> q >> r >> s >> t;
    cout << sum(p, q) << ' ' << sum(r, s, t) << endl;
}
```
Lecture 14: Advanced Features of Functions Part 2: Lambda expressions (unit?unit=80&lesson=89)

Lecture 14: Advanced Features of Functions Part 3: Default values to parameters (unit?unit=80&lesson=90)

Lecture 14: Advanced Features of Functions Part 4: Function overloading and lecture conclusion (unit?unit=80&lesson=91)

Download Videos (unit?unit=80&lesson=182)

Weekly Feedback (unit?unit=80&lesson=194)

Quiz: Week 6 Assignment (assessment?name=215)

Week 6 Programming Assignment 1 (/noc20_cs53/progassignment?name=217)

Week 6 Programming Assignment 2 (/noc20_cs53/progassignment?name=218)