```
1  #include <iostream>
2  #include <string>
3  #include <math.h>
4  using namespace std;
5
6  /**
7   * Rounds float to the nearest cent (I hope, this
       took a lot of trial and error)
8   *
9   * @param price a float of arbitrary precision
       representing cost of meal.
10  * @returns string of number rounded to 2nd decimal
       place.
11  */
12 string cents(float price)
13 {
```

```
14      float rounded = (round(price * 100) / 100
        ) + 0.001;
15      string str_rounded = to_string(rounded);
16      return str_rounded.substr(0, str_rounded.length
        ()-4);
17      // man oh man do i miss python's round()
        right now
18  }
19
20  /**
21   * Provides formatted visual of tax and tip
        calculations.
22   *
23   * @param subtotal the cost, of arbitrary precision,
        of the meal before tax and
24   * tip calculations.
```

```
25   * @returns receipt as multiline string.
26   */
27  string billCalculator(float subtotal)
28  {
29      string str_subtotal = cents(subtotal),
30             tax = cents(subtotal * 0.0675),
31             tip = cents((subtotal * 0.0675 +
    subtotal) * 0.2),
32             total = cents(subtotal + (subtotal * 0.
    0675) + ((subtotal * 0.0675 + subtotal) * 0
    .2)); // or, 1.281 * subtotal
33      string answer = "Subtotal:  $" + str_subtotal
        +
34                      "\nTax:       $" + tax +
35                      "\nTip:       $" + tip +
36                      "\n\nTotal:    $" + total;
```

```
37      return answer;
38  }
39
40  int main( )
41  {
42      float mealPrice = 247.63;
43      cout << "--------------------\n"
44           << billCalculator(mealPrice)
45           << "\n\n--------------------\n
        Customer Copy\n\n";
46  }
```