Lab Explanation

The requirements for this lab were to create a calculator program that took an input of the number of people attending a pizza party and then outputted the number of pizzas that were needed for the party and then the total cost for the pizzas.

Code

Kieran_Llarena.cpp Lab1

Kieran_Llarena.cpp > ...

```cpp
#include <iostream>
#include <iomanip>
using namespace std;

int main() {
  const double COST_PER_PIZZA = 14.95;
  const unsigned int SLICES_PER_PERSON = 2;
  const unsigned int SLICES_PER_PIZZA = 12;

  unsigned int numPeople;

  cin >> numPeople;

  unsigned int numPizzas = ceil(numPeople * SLICES_PER_PERSON / static_cast<double>(SLICES_PER_PIZZA));
  double totalPizzaCost = numPizzas * COST_PER_PIZZA;

  cout << fixed << setprecision(2);

  cout << "People: " << numPeople << endl;
  cout << "Pizza(s) needed: " << numPizzas << endl;
  cout << "Cost for " << numPizzas << " pizza(s): $" << totalPizzaCost << endl;

  return 0;
}
```

(Lines 6-8) I decided to assign the cost per pizza, the number of slices per person, and the number of slices per pizza as constant as a safety measure. Although it is just me working on the program, I wanted to practice safe and good coding for a collaborative environment. In the case that these variables get redeclared later in the program, that would be detrimental as the output of the program depends on the value of these variables. ***(Line 10)*** I decided to declare the number of people as an unsigned integer as you cannot have a negative number of people and a decimal of a person. ***(Lines 14-15)*** I figured out that to get the number of pizzas, you need to first find the number of slices that are needed. To get that, you first multiply the average number of slices that a person consumes and the number of people. After that, you divide that product by the number of slices per pizza, giving you the number of pizzas needed for the pizza party. To then find the total cost of the pizzas, you multiply the number of pizzas by the costs per pizza. To explain some of my code, I decided to make the numPizzas variable an unsigned integer as you cannot have a negative amount of pizzas, and the assignment required for the number of pizzas to be a whole number. Additionally, I decided to use static_cast within the ceil() function as it only takes parameters that are doubles. I only had to cast one of the variables in order to do floating point arithmetic, and I chose the SLICES_PER_PIZZA variable.

Test 1

```
MacBook-Air-5:output kllaren
20
People: 20
Pizza(s) needed: 4
Cost for 4 pizza(s): $59.80
```

Test 2

```
MacBook-Air-5:output kllarer
7
People: 7
Pizza(s) needed: 2
Cost for 2 pizza(s): $29.90
```

Test 3

```
MacBook-Air-5:output kllarena$
60
People: 60
Pizza(s) needed: 10
Cost for 10 pizza(s): $149.50
```

Test 4

```
MacBook-Air-5:output kllare
0
People: 0
Pizza(s) needed: 0
Cost for 0 pizza(s): $0.00
```

Test 5

```
MacBook-Air-5:output kllarer
5
People: 5
Pizza(s) needed: 1
Cost for 1 pizza(s): $14.95
```