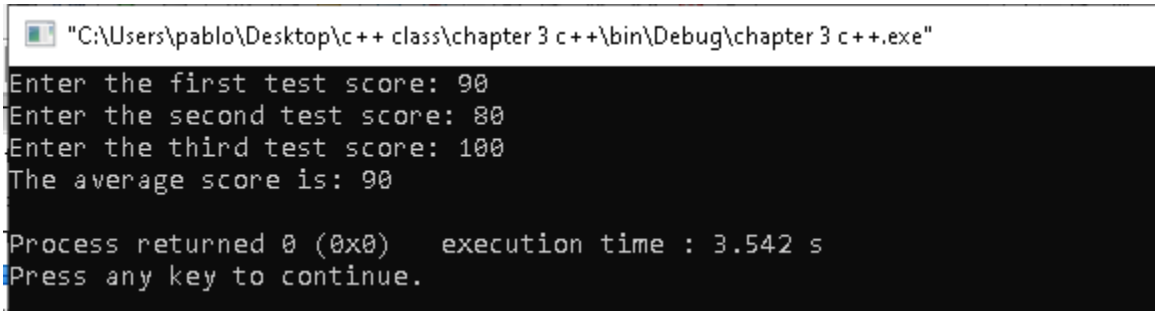
Cabrera_Pablo_Cop1334C_Hw2

Duplicate figures:

- **3.6**

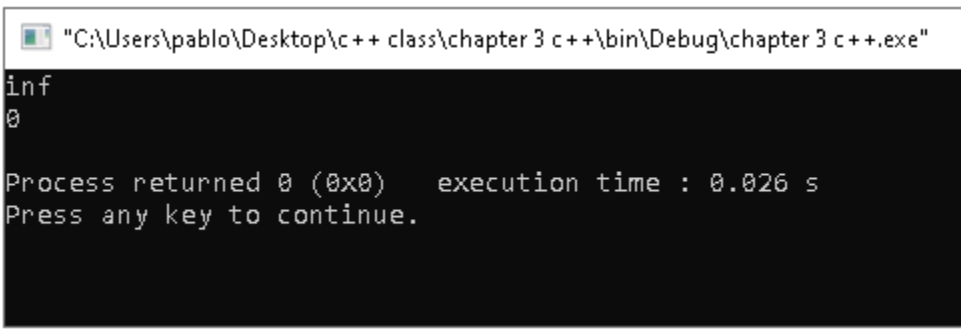
```
// This program calculates the average
// of three test scores.
#include <iostream>
#include <cmath>
using namespace std;

int main()
{
   double test1, test2, test3; // To hold the scores
   double average;             // To hold the average

   // Get the three test scores.
   cout << "Enter the first test score: ";
   cin >> test1;
   cout << "Enter the second test score: ";
   cin >> test2;
   cout << "Enter the third test score: ";
   cin >> test3;

   // Calculate the average of the scores.
   average = (test1 + test2 + test3) / 3.0;

   // Display the average.
   cout << "The average score is: " << average << endl;
   return 0;
```

}



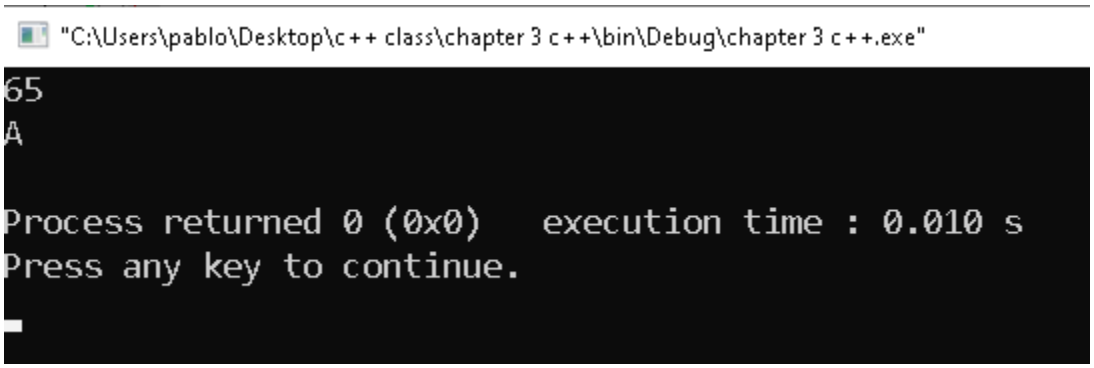
- **3.8**

```
// This program can be used to see how your system handles
// floating-point overflow and underflow
#include <iostream>
using namespace std;


int main()
{
   float test;


   test = 2.0e38 * 1000;   // Should overflow test.
   cout << test << endl;
   test = 2.0e-38 /2.0e38; // Should underflow test.
   cout << test << endl;
   return 0;
}
```



- **3.10**

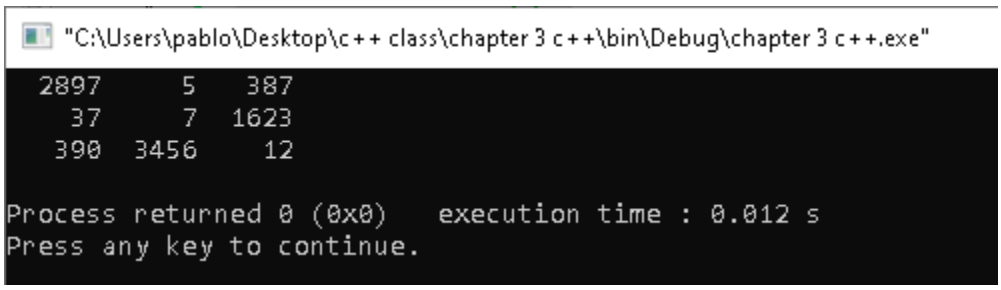
```
// This program uses a type cast expression to print a character
// from a number.
#include <iostream>
using namespace std;

int main()
{
   int number = 65;

   // Display the value of the number variable.
   cout << number << endl;

   // Display the value of number converted to
   // the char data type.
   cout << static_cast<char>(number) << endl;
   return 0;
}
```



- **3.13**

```
// This program displays three rows of numbers
#include <iostream>
```

```
#include <iomanip>      // Required for setw
using namespace std;

int main()
{
   int num1 = 2897, num2 = 5,    num3 = 387,
       num4 = 37,   num5 = 7,    num6 = 1623,
       num7 = 390,  num8 = 3456, num9 = 12;

   // Display the first row of numbers
   cout << setw(6) << num1 << setw(6)
        << num2 << setw(6) << num3 << endl;

   // Display the second row of numbers
   cout << setw(6) << num4 << setw(6)
        << num5 << setw(6) << num6 << endl;

   // Display the third row of numbers
   cout << setw(6) << num7 << setw(6)
        << num8 << setw(6) << num9 << endl;

   return 0;
}
```

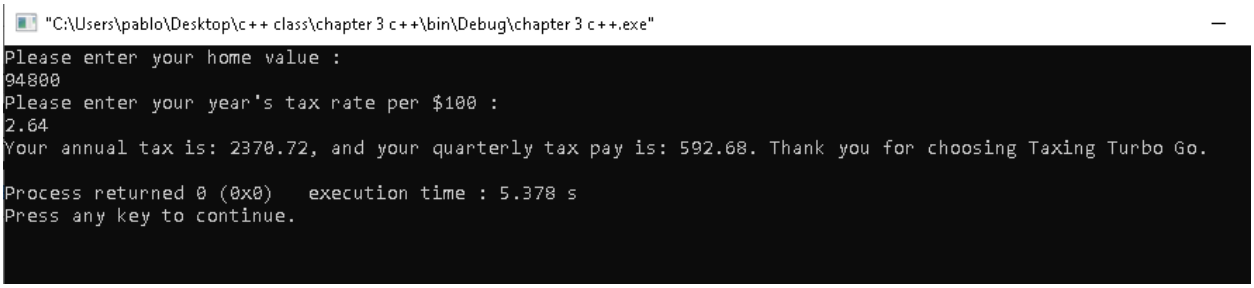


Solve Problems:

- **3.16**

```
// 3.16
#include <iostream>
using namespace std;



// Home value, tax rate for senior citizen
int main()
{
   double exemption, homeVal, redVal, tax; // We create the doubles for the exemption, home value, reduced value and tax per $100.
   double payTax, quarterTax;              // We create the doubles for the tax pay.
   exemption = 5000;


   // We ask for the home value.
   cout << "Please enter your home value :" << endl;
   cin >> homeVal;


   redVal = (homeVal - exemption);     // We get the value and create the new variable for it.


   // We ask for the tax rate.
   cout << "Please enter your year's tax rate per $100 :" << endl;
   cin >> tax;


   payTax = redVal / 100 * tax;        // We get to calculate now the taxes thanks to the input.
   quarterTax = payTax / 4;


   // We display the value of tax and quarterly tax.
```

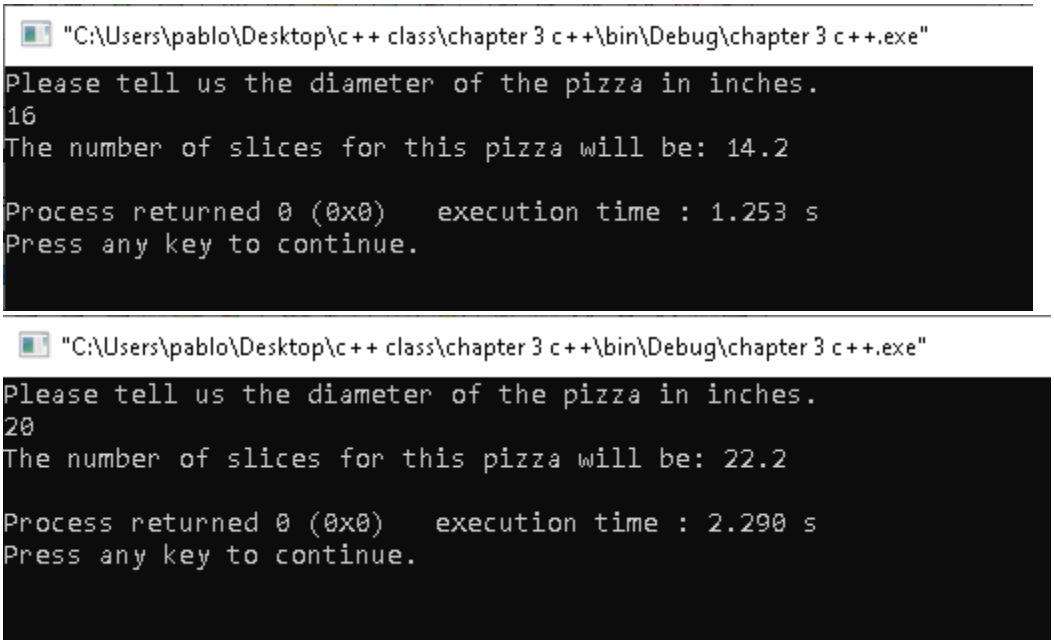
```
    cout << "Your annual tax is: " << payTax << ", and your quarterly tax pay is: " << quarterTax << ". Thank you for choosing Taxing Turbo Go." << endl;


    return 0;

}
```



- **3.20**

```
// 3.20 Pizza Pi

#include <iostream>

#include <cmath>

using namespace std;


int main()

{

    double diameter, radius, numSlices, pizzaArea, sliceArea;       //We get the doubles to call for this problem.

    sliceArea = 14.125;                                 // We get the area of each slice so we can calculate it later on.


    cout << "Please tell us the diameter of the pizza in inches." << endl;

    cin >> diameter;


    radius = diameter / 2;

    pizzaArea = M_PI * pow(radius,2);

    numSlices = pizzaArea / sliceArea;
```

```
    // we round multiply by 10 and divide to get one decimal of precision to get the specific number of slices.
    cout << "The number of slices for this pizza will be: " << round(numSlices*10)/10 << endl;
    return 0;
}
```



- **3.24**

```
// 3.24 Pizza Pi
#include <iostream>
#include <cmath>
using namespace std;

int main()
{
    double numGrape, rowLenght, space, vineSpace;

    // We ask for the length of the row input.
    cout << "What is the length of the row, in feet?" << endl;
```

```
    cin >> rowLenght;

    // We ask for the space used by an end-post assembly.
    cout << "What is the space used by an end-post assembly, in feet?" << endl;
    cin >> space;

    // We ask for the space between vines.
    cout << "What is the space between vines, in feet?" << endl;
    cin >> vineSpace;

    // We compute the input to get the number of vines that fir the row.
    numGrape = (rowLenght - 2 * space) / vineSpace;

    cout << "The number of grape vines that will fit this row are: " << endl << numGrape << endl;

    return 0;
}
```