**WEEK 5 – Review Questions and**

**Programming Challenges Handout**

**Chapter: 3**

**Review Questions:**

1. Write a cout statement so the variable divSales is displayed in a field of eight

spaces, in fixed-point notation, with a decimal point and two decimal digits.

cout << fixed << showpoint << setprecision(2);  
  
cout << setw(8) << divSales;

**Predict the Output**

1. Trace the following programs and tell what each will display. (Some require a calculator.)
2. ***(Assume the user enters 38711. Use a calculator.)***

#include <iostream>

using namespace std;

int main()

{

double salary, monthly;

cout << "What is your annual salary? ";

cin >> salary;

monthly = static\_cast<int>(salary) / 12;

cout << "Your monthly wages are " << monthly << endl;

return 0;

}

3225

**B)**

#include <iostream>

using namespace std;

int main()

{

long x, y, z;

x = y = z = 4;

x += 2;

y -= 1;

z \*= 3;

cout << x << " " << y << " " << z << endl;

return 0;

}

6 3 12

**C)**

#include <iostream>

using namespace std;

#define WHO "Columbus"

#define DID "sailed"

#define WHAT "the ocean blue."

int main()

{

const int WHEN = 1492;

cout << "In " << WHEN << " " << WHO << " "

<< DID << " " << WHAT << endl;

return 0;

}

In 1492 Columbus sailed the ocean blue.

1. **Each of the following programs has some errors. Locate as many as you can.**

**A)**

#include <iostream>;

using namespace std;

main

{

double number, half;

cout << "Enter a number and I will divide it\n"

cout << "in half for you.\n"

cin >> number1;

half =/ 2;

}

FIXED:

#include <iostream>;

using namespace std;

int main()

{

double number, half;

cout << "Enter a number and I will divide it\n";

cout << "in half for you.\n";

cin >> number;

half = number / 2;

cout << half;

}

**B)**

#include <iostream>;

using namespace std;

int main()

{

char name, go;

cout << "Enter your name: ";

cin.width(20);

cin.getline >> name;

cout << "Hi " << name << endl;

cout "Press the ENTER key to end this program.";

cin >> go;

return 0;

}

FIXED:

#include <iostream>

#include <fstream>

using namespace std;

int main()

{

char go;

char name[20];

cout << "Enter your name: ";

cin.getline(name, 20);

cout << "Hi " << name << endl;

cout << "Press the ENTER key to end this program.";

cin >> go;

return 0;

}

**Programming Challenges:**

1. **Senior Citizen Property Tax**

Madison County provides a $5000 homeowner exemption for senior citizens. For example, if their house is valued at $158,000 its assessed value would be $94,800, as explained above.

However they would only pay tax on $89,800. At last year’s tax rate of $2.64 for each $100 of assessed value, their property tax would be $2370.72. In addition to the tax break, senior citizens are allowed to pay their property tax in 4 equal payments. The quarterly payment due on this property would be $592.68. Write a program that asks the user to input the actual value of a piece of property and the current tax rate for each $100 of assessed value. The program should then calculate and report how much annual property tax a senior homeowner will be charged for this property and what their quarterly tax bill will be.

**In-Class Lab for this Week:**

Currency Conversion