**WEEK 4 – Review Questions and**

**Programming Challenges Handout**

**Chapter: 3**

**Review Questions:**

1. **Assume the C-String name is defined as follows:**

char name[25];

A) Using a stream manipulator, write a cin statement that will read a string into

name, but will read no more characters than name can hold.

B) Using the getline function, write a cin statement that will read a string into

name but that will read no more characters than name can hold.

A) cin>> description;  
B) get line (cin, description);

1. **What header files must be included in the following program?**

int main()

{

double amount = 89.7;

cout << fixed << showpoint << setprecision(1);

cout << setw(8) << amount << endl;

return 0;

}

2)

#include <iostream>

#include <iomanip>

1. **Complete the following table by writing the value of each expression in the Value column.**

**Expression Value**

28 / 4 – 2 12

6 + 12 \* 2 – 8 22

4 + 8 \* 2 20

6 + 17 % 3 – 2 6

2 + 22 \* (9 - 7) 46

(8 + 7) \* 2 30

(16 + 7) % 2 – 1 0

12 / (10 - 6) 3

(19 - 3) \* (2 + 2) / 4 16

1. **Assume a program has the following variable definitions**

int units;

float mass;

double weight;

**and the following statement:**

weight = mass \* units;

Which automatic data type conversions will take place?

Units becomes a float. Everything else remains as is.

1. **Assume a program has the following variable definitions**

int a, b = 2;

double c = 4.3;

**and the following statement:**

a = b \* c;

What value will be stored in a?

8

**Programming Challenges:**

1. **Stadium Seating**

There are three seating categories at a stadium. For a softball game, Class A seats cost $15, Class B seats cost $12, and Class C seats cost $9. Write a program that asks how many tickets for each class of seats were sold, then displays the amount of income generated from ticket sales. Format your dollar amount in a fixed-point notation with two decimal points and make sure the decimal point is always displayed.

1. **Box Office**

A movie theater only keeps a percentage of the revenue earned from ticket sales. The remainder goes to the distributor. Write a program that calculates a theater’s gross and net box office profit for a night. The program should ask for the name of the movie, and how many adult and child tickets were sold. (The price of an adult ticket is $6.00 and a child’s

ticket is $3.00.)

**It should display a report similar to the following:**

Movie Name: “Wheels of Fury”

Adult Tickets Sold: 382

Child Tickets Sold: 127

Gross Box Office Profit: $ 2673.00

Amount Paid to Distributor: – $ 2138.40

Net Box Office Profit: $ 534.60

Assume the theater keeps 20 percent of the gross box office profit.

1. **Celsius to Fahrenheit**

Write a program that converts Celsius temperatures to Fahrenheit temperatures. The formula is [ F = 9/5 C + 32] where F is the Fahrenheit temperature and C is the Celsius temperature. The program should prompt the user to input a Celsius temperature and should display the corresponding Fahrenheit temperature.

**In-Class Lab: LengthConversion**

You will be working for this week – it has its own link.