# HW #2:

Pdf file only, with heading:  
HW #2   
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Due: 11:00 pm, Sunday Sept. 16, 2018 at Google Classroom

1. (12 pts) Write the steps for the following task: Write a program that takes a number in hours (e.g., 1.33) from the user, converts it into minutes, and output it in minutes. (See the Sum Example in Lecture 03 as an example.)

**#include <stdio.h>**

**int main(void) {**

**float hours, minutes;**

**printf("Enter hours:");**

**scanf("%f",&hours);**

**minutes = hours \* 60;**

**printf("Minutes:%f\n",minutes);**

**return 0;**

**}**

1. (18 pts) Write the steps for the following task: Write a program that takes two numbers from the user and outputs their product.

**#include <stdio.h>**

**int main(void) {**

**float num1,num2;**

**printf("Enter first number:");**

**scanf("%f",&num1);**

**printf("Enter second number:");**

**scanf("%f",&num2);**

**printf("%f\n",num1 \* num2);**

**return 0;**

**}**

1. (15 pts) Do an Internet search on keyword "Proofs of Program Correctness" and answer the following questions:  
   a. What is the simplest technique generally accepted to prove program correctness empirically?  
   **Feeding various inputs and verifying correctness of the output**  
     
   b. In the absence of incorrect behavior in a, can we conclude that the program is correct? Why?  
   **No, because there could still be possible values that could be entered that might not function properly i.e. a number greater than 2^64**
2. (10 pts) Declare a variable of type char and initialize it to the letter f using a single command.   
    **char letter = ‘f’;**
3. (10 pts) A program is used to convert from hours to minutes. Write the code for storing the conversion factor 60 as a constant that cannot be changed.  
   #**define tomin 60**
4. (15 pts) Answer true or False: Tell why.
   1. The following declaration of two integers is valid: int value1, Value1;  
      **True, variables in c are case sensitive**
   2. The scanf function of the standard library is used to output values to the screen.  
      **False, the printf function is used to output**
   3. Not indenting the code properly leads to compilation errors.   
      **False, indentation is mainly to aid in making code easier to read**
5. (20 pts) What is the output of the following program?

#include<stdio.h>

int main(void) {

int x = 4, y = 7;

x = 2\*y;

y = y + 2;

x = 2\*x + y;

x – 1;

printf(“X = %d\n Y = %d\n”, x, y);

return 0;

}

**X = 37**

**Y = 9**