CS 137 Midterm Review Questions

Section 1: Simple Programs, Functions and Header Files

1. Write a program that prints “Hello World!”
2. Write a function that takes in an int h and an int i and prints h x i = hi where hi is h multiplied by i.
3. What is each of the following header files/library used for?
   1. stdio.h
   2. math.h
   3. assert.h
4. Write a function that takes in 3 triangle side lengths from a right triangle and prints out the 3 angles. What libraries will you need?
5. Write a function to Calculate the result of F(n).
6. Re-do your quizzes and make your own quiz in a similar style and complete that one too.
7. Take in an integer n, then reads in n more ints. Multiply them and print the result.
8. Find the least common multiple of two numbers.

Section 2: Working With Arrays

1. Given 3 arrays of the same size a,b and c. Place the absolute value of a[i] - b[i] in c[i] where i = 0...n where n is the size of the arrays.
2. Write a program that multiplies each element of an array by a given integer
3. Find the second smallest number in an array.
4. Go over A4 and all the array questions.

Section 3: Algorithms You May Need To Know

1. GCD Algorithm
2. Bisection Algorithm
3. Horner’s Method
4. Finding Primes

Section 4: Tricky Stuff

1. Write a program that converts a binary number (given in array form) to base 10.
2. How would you write a program to do the opposite?
3. Write a program that takes in an integer n and prints a pyramid with n rows of \*’s.
4. Print an upside down pyramid instead.
5. Determine if a number is a palindrome. A natural number is a palindrome if its value remains the same when its (decimal) digits are reversed.