CS 330 Homework 3A

1. In this question, assume 12-bit unsigned representation. What is the range of values that can be added to the decimal value 185 without causing overflow?

2. In this question, assume 12-bit 2's-complement representation. What is the range of values that can be added to the decimal value 185 without causing overflow?

3. In this question, assume 12-bit 2's-complement representation. What is the range of values that can be subtracted from the decimal value 185 without causing overflow?

4. Write MIPS instructions to implement the following C function. Be sure to state which register you use to hold each variable.

```
int max_prod (int a, int b, int c, int c)
{
   if (a * b > c * d) {
      return a * b;
   } else {
      return c * d;
   }
}
```

   Hint: You will need to write code to compare 64-bit quantities that are split across two registers. Return the product using `$v0` and `$v1`.

5. Write MIPS instructions to implement the following C function. State which registers you use to hold each variable.

```
int top (int a, int b)
{
   while (a % 3 != b % 3) {
      b++;
   }
   return b;
}
```