Name:
Worksheet#01 - Solution
CSC 211 - Spring 2019

1. Write a main function using the C++ language (with include and namespace declaration)

```
#include <iostream>
using namespace std;

int main(){


      return 0;
}
```

2. What is the largest unsigned integer that can be stored in one byte (8 bits)?

a. <u>255</u> c. 128

b. 8 d. 65535

3. What is the largest unsigned integer that can be stored using ***n*** bits?[1]

$$2^n - 1$$

4. Unix/Linux terminal commands to:

4.1 Enter directory named *sandbox*: **`cd sandbox`**

4.2 List all files and directories in your current directory location: **`ls`**

4.3 Move up one directory: **`cd ..`**

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[1] The -1 is because integers start at 0, but our counting starts at 1.

So, 2^32-1 is the maximum value for a 32-bit unsigned integer (32 binary digits). 2^32 is the number of possible values.

To simplify why, look at decimal. 10^2-1 is the maximum value of a 2-digit decimal number (99). Because our intuitive human counting starts at 1, but integers are 0-based, 10^2 is the number of values (100).

4.4 Compile file named main.cpp: **`make hello`**

4.5 Execute binary file named main: **`./main`**