## ECEN 2350: Digital Logic

## Assignment #1

1.	[2 points.]	Convert the fo	ollowing (dec	imal) number	s to binary:

- (a) 5
- (b) 37
- (c) 42
- (d) 395
- 2. [2 points.] Convert the following binary numbers to hexidecimal:
  - (a) 1100
  - (b) 01011011
  - (c) 111111111
  - (d) 0011110001011010
- 3. [5 points.] Convert the following hexidecimal numbers to binary and decimal. An example row is provided:

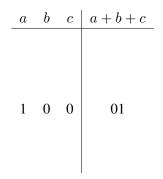
Hex	Binary	Decimal
0x1C	00011100	28
0x7		
0x12		
0x3F		
0xFF		
0xA6		

## 4. [6 points.]

(a) How many unique 5-bit numbers are there? (e.g. 10101, 01101, etc)

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(b) Complete the following table that adds three one-bit numbers (a+b+c) together, for all combinations of a, b, and c. One of the rows is shown to clarify the format:



- (c) Looking at your table above, describe an automated way to add three 1-bit numbers together. For instance, if just one of a or b or c is a 1, what should the output be? You can use English, or code (or Verilog!) to answer.
- (d) Can you come up with an equation for each of the two bits in the output (a + b + c) that depends on a, b, and c and doesn't use the addition operation?

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