Math 300 **Fall 2024**

Lab Assignment #20

This lab is due at 12:30 PM on Wednesday, 11/20 and is worth 10 points. This part may be done individually, or in a group of 2, 3, or 4 people.

1) Convert these binary numbers to base 10:
a) 101
b) 11000
c) 1111

d) 1010101
e) 110001
f) 1000000000

2) Convert these base 10 numbers into binary:
a) 67
b) 101
c) 14

d) 127
e) 99
f) 298

3) In base 10, odd numbers end in 1, 3, 5, 7, or 9, and even numbers end in 0, 2, 4, 6, or 8. How can you tell if a number is even or odd when it is written in binary. (Hint: look at the last digit.)

4) Count from 1 to 10000 in binary. (Note: "10000" in binary is only 16 in base 10, so this isn't very far.)

5) Try adding in binary: 1001 + 10011 = ?
Check your answer by converting to base 10.

6) Try multiplying in binary: 1001 * 101 = ?
Check your answer by converting to base 10.