

CSC 110 – Homework Problems

Assigned: Friday, February 1, 2008

Due: Thursday, February 7, 2008 in class

Name _____

Please write your answers on these sheets and hand them in stapled to the top of your homework. Make sure to attach additional sheets that show your **WORK** for the problems!! Make sure that you clearly label those sheets with the appropriate problem numbers.

1. Translate the following base 2 (binary) numbers into base 10 (decimal):
 - (a) 110110101
 - (b) 0000000001
 - (c) 11111
2. Translate the following base 8 numbers (octal) into base 10 (decimal):
 - (a) 201
 - (b) 64
3. Translate the following base 16 (hexadecimal) numbers into base 10 (decimal):
 - (a) A2F
 - (b) 42
4. Translate the following base 8 numbers into base 2:
 - (a) 45310
 - (b) 7702
 - (c) 10
5. Translate the following base 16 numbers into base 2:
 - (a) FFFFF
 - (b) ACE201
6. Translate the following base 16 numbers into base 8:
 - (a) 789D
 - (b) 4A6F0
7. Translate the following base 8 numbers into base 16:
 - (a) 1043
 - (b) 0056
8. Translate the following base 2 numbers into BOTH base 8 and base 16:
 - (a) 1100110
 - (b) 1
 - (c) 011011011

9. Translate the following base 10 numbers into base 2:
- (a) 4328
 - (b) 64
 - (c) 15
 - (d) 197
10. Show the value of the arithmetic expressions below. ALL of the numbers are in binary:
- (a) $10101 - 111$
 - (b) $11111 + 1$
 - (c) $1110001 + 10101010$
 - (d) $101 - 11$
11. Why are binary numbers important in computing?
12. Make a table showing the powers of two starting with 2^0 up to 2^{12} .