

Homework 2
(Binary, Data representation, Gates)
Due: 4:00pm, Mar. 13th

1. Convert the following decimal numbers to binary:
a. 3 ; b. 10; c. 234; d. 8179
2. Convert the following decimal numbers to octal:
a. 4 ; b. 11; c. 224; d. 1792
4. Convert the following decimal numbers to hexadecimal:
a. 13; b. 19; c. 224; d. 2781
5. Convert the following binary numbers to decimal:
a. 10; b. 101; c. 11011; d. 1111010001
6. Convert the following octal numbers to decimal:
a. 712; b. 20131;
7. Convert the following binary numbers to octal:
a. 10; b. 101;
8. Perform the following binary additions.
a. 101+11; b. 11+1101
9. Perform the following binary subtraction.
a. 101-11; b. 11-1
10. How many things can be represented with 8 bits?
11. How would the following string of characters be represented using run-length encoding?
xxxxxyyzzzzzz
12. What does color depth indicate?
13. Give the three representations of a NOT gate and say in words what NOT means.
14. What happens when an electric signal is grounded?
15. Show the behavior of the following circuit with a truth table:

