Problem 1 from Midterm; Problems 3, 4, 5 from HW 6

Regular Expressions

Express each of these sets using a regular expression:

a) The set of strings of one or more 0s followed by a 1
   Solution: 00*1
b) The set of strings of odd length
   Solution: (0 ∪ 1) [(0 ∪ 1)(0 ∪ 1)]*
c) The set of strings ending in 1 and not containing 000
   Solution: (1 ∪ 01 ∪ 001)(1 ∪ 01 ∪ 001)*
d) The set of strings containing a string of 1s such that the number of 1s is equivalent to 2 mod 3, followed by an even number of 0s.
   Solution: 11(111)∗(00)∗