Homework 1

班级　　学号　　姓名

1. Give DFA's accepting the languages over the alphabet $\{0, 1\}$.

   a) The set of strings such that the number of 0's is divisible by three, and the number of 1's is divisible by two.

   b) The set of all strings such that each block of three consecutive symbols contains at least two 0's.

2. Design ε-NFA's for the following languages. Try to use ε-transitions to simplify your design.

   a) The set of strings consisting of zero or more a's followed by zero or more b's, followed by zero or more c's.

   b) The set of strings that consist of either 01 repeated one or more times or 010 repeated one or more times.

3. Convert the following NFA to a DFA with subset construction.

	0	1
$\to p$	$\{p, q\}$	$\{p\}$
q	$\{r\}$	$\{r\}$
r	$\{s\}$	$\emptyset$
$*s$	$\{s\}$	$\{s\}$