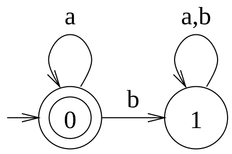
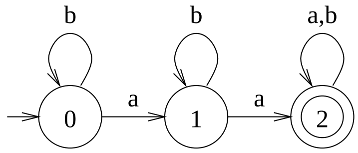
Automata Theory: Solutions 4

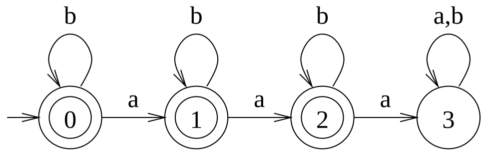
```
                                          X
                                          X
                          X               X
                          X               X
                          X               X
                          X               X
number of                 X               X
homeworks                 X       X       X
                  X       X       X       X
                  X       X       X       X
              X   X       X   X   X       X
          X   X   X   X   X   X   X   X   X
          ----------------------------------
          2   3   4   5   6   7   8   9   10
                       grades
```

Problem 1
For each of the following three languages, draw a DFA that accepts it:

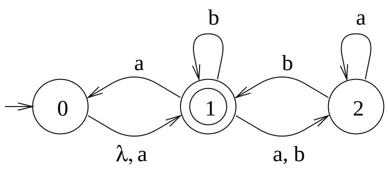
(a) All strings that have no b's (note that it includes λ).
(b) All strings with at least two a's and any number of b's.
(c) All strings with at most two a's and any number of b's.

(a) 

(b) 

(c) 

Problem 3
Draw a DFA that is equivalent to the following NFA:



An equivalent deterministic accepter is as follows: