

Student ID:
Name Surname:

Automata Theory course Quiz 3.a (2015-2016 Fall)
(Please use free space for draft and fit your answer to boxes.)

1. (50P) Prepare a Turing machine code so that it produce a string into the second tape including only "b"s as twice as number of written "a"s in the first tape. ($\Sigma=\{a,b\}$)

2. (50P) According to a reference point, we want to determine the position of the World in the universe. Let's assume we know the formula of circular motions of around itself, around the sun, around the galaxy, and its unknown numbers of other turnings. Present your comments about the problem of determining the position of the World at any instant in terms of decidability.