CIS 511 Homework 3

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Problem 1

We want to show that finding if a Turing Machine has a *useless state* is Turing Decidable. We formulate this as a language:

$$L = \{\langle M, q\rangle\} \mid q \in Q(M),\ \forall s \in \Sigma^* M(q)\, M \text{ does not enter } q$$

Problem 2

Problem 3

Problem 4

Problem 5

Problem 6

Problem 7