CS 1511 HW X

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Theory of Computation

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3. (a) Say there is a Turing Machine A that takes in a Turing Machine M, and determines whether the language $L(M)$ accepted by M is the empty language.

If A is reducible to B and B is decidable, A also is decidable. If A is undecidable and reducible to B, B is undecidable. The Halting Problem is undecidable. Therefore, if the Halting Problem is undecidable, and M is decidable