HW5, extra problems

A. Prove that at least $1 - e^{-5} \approx 99.99326\%$ of all languages over $\{0, 1\}$ are not Turing-recognizable.

B. Debunk the following argument in 10 lines or less:

"Look at the 'decider' TMs, which decides a language $L(M)$. Consider now the language $D_{\text{TM}} = \{\langle M, w\rangle \,|\text{the decider TM } M \text{ accepts } w\}$. Clearly, by simulation, this D_{TM} is decidable. But for this language we can also repeat the proof of Theorem 4.9 (that A_{TM} is undecidable), and reach the conclusion that D_{TM} undecidable."