Homework 5, Individual

(1) 9.2.39.

Given a string $p\sigma_0 i$, let q be the program that accepts j iff p on input i does not accept after at most $|j|$ steps (using a universal Python program). Hence q accepts all its inputs iff p does not accept i (after any finite number of steps), iff $p\sigma_0 i \in$ NON-ACCEPTANCE. Hence if L is recognizable, then so is NON-ACCEPTANCE,

which is impossible.