Name: ____________________________ Student ID:

Math 166 - Theory of Computability - Fall 1999

Quiz #8 — December 9

1. Draw the state diagram of a Turing machine M which has input alphabet $\Sigma = \{0, 1\}$ and which performs as follows on input w. If $w = av$ where a is a symbol 0 or 1, then M changes the tape contents to ava and halts in q_{accept}. If $w = \epsilon$, M does nothing to the tape contents and just halts in q_{accept}.

   In other words, M copies the first symbol of w (if any) to the end of w.