1. 7.3.1 c (cycle)

2. 7.3.3c (half)

3. 7.3.4 d and e

4. Construct a single tape Turing machine that performs multiplication. The Turing machine should start in a state $q_0$ scanning the leftmost symbol on the tape. If the contents of the tape are $01^n01^n0$ followed by all blanks, then the Turing machine should eventually halt with $01^n0$ possibly follow by some 0’s and then all blanks on the tape.