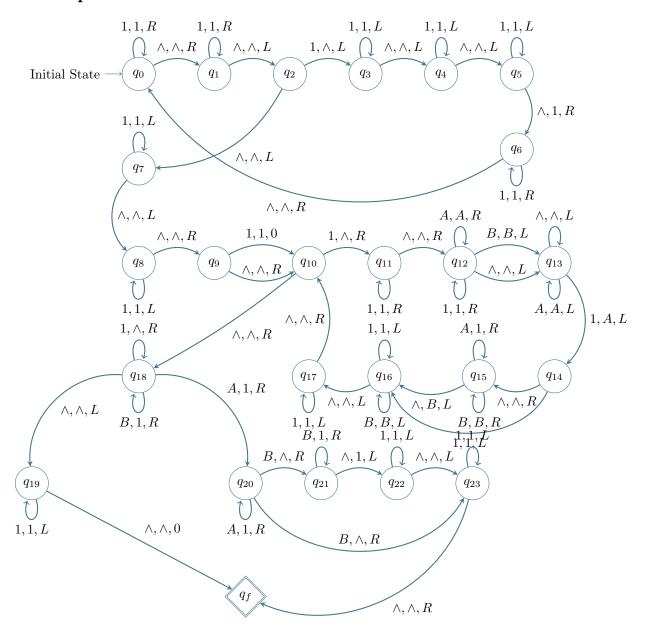
Mod/Div Turing Machine

Individual Coursework F29FB, Spring 2022

SUBMITTED BY

 $\mathop{\rm YOAV}_{\it H00347035} \mathop{\rm LEVI}_{\it H00347035}$

1 Graph



2 Mathematical Notation

 $s_0 \equiv \land, s_1 \equiv 1, s_2 \equiv A, s_3 \equiv B$

```
M_q = \{
                                                             ((q_{15}, s_0) \rightarrow (q_{16}, s_3, L)),
((q_0, s_1) \to (q_0, s_1, R)),
                                                             ((q_{16}, s_1) \rightarrow (q_{16}, s_1, L)),
((q_0, s_0) \to (q_1, s_0, R)),
                                                             ((q_{16}, s_3) \to (q_{16}, s_3, L)),
((q_1, s_1) \to (q_1, s_1, R)),
                                                             ((q_{16}, s_0) \rightarrow (q_{17}, s_0, L)),
((q_1, s_0) \to (q_2, s_0, L)),
                                                             ((q_{17}, s_1) \to (q_{17}, s_1, L)),
((q_2, s_0) \to (q_7, s_0, L)),
                                                             ((q_{17}, s_0) \to (q_{10}, s_0, R)),
((q_2, s_1) \to (q_3, s_0, L)),
                                                             ((q_{18}, s_1) \to (q_{18}, s_0, R)),
((q_3, s_1) \to (q_3, s_1, L)),
                                                             ((q_{18}, s_3) \rightarrow (q_{18}, s_1, R)),
((q_3, s_0) \to (q_4, s_0, L)),
                                                             ((q_{18}, s_0) \rightarrow (q_{19}, s_0, L)),
((q_4, s_1) \to (q_4, s_1, L)),
                                                             ((q_{19}, s_1) \to (q_{19}, s_1, L)),
((q_4, s_0) \to (q_5, s_0, L)),
                                                             ((q_{19}, s_0) \to (q_f, s_0, 0)),
((q_5, s_1) \to (q_5, s_1, L)),
                                                             ((q_{18}, s_2) \to (q_{20}, s_1, R)),
((q_5, s_0) \to (q_6, s_1, R)),
                                                             ((q_{20}, s_2) \rightarrow (q_{20}, s_1, R)),
                                                             ((q_{20}, s_3) \to (q_{21}, s_0, R)),
((q_6, s_1) \to (q_6, s_1, R)),
((q_6, s_0) \to (q_0, s_0, R)),
                                                             ((q_{20}, s_0) \to (q_{23}, s_0, L)),
((q_7, s_1) \to (q_7, s_1, L)),
                                                             ((q_{21}, s_3) \to (q_{21}, s_1, R)),
((q_7, s_0) \to (q_8, s_0, L)),
                                                             ((q_{21}, s_0) \to (q_{22}, s_1, L)),
                                                             ((q_{22}, s_1) \to (q_{22}, s_1, L)),
((q_8, s_1) \to (q_8, s_1, L)),
((q_8, s_0) \to (q_9, s_0, R)),
                                                             ((q_{22}, s_0) \rightarrow (q_{23}, s_0, L)),
((q_9, s_1) \rightarrow (q_{10}, s_1, 0)),
                                                             ((q_{23}, s_1) \rightarrow (q_{23}, s_1, L)),
((q_9, s_0) \to (q_{10}, s_0, R)),
                                                             ((q_{23}, s_0) \to (q_f, s_0, R)),
((q_{10}, s_1) \to (q_{11}, s_0, R)),
((q_{10}, s_0) \to (q_{18}, s_0, R)),
((q_{11}, s_1) \to (q_{11}, s_1, R)),
((q_{11}, s_0) \to (q_{12}, s_0, R)),
((q_{12}, s_1) \to (q_{12}, s_1, R)),
((q_{12}, s_2) \rightarrow (q_{12}, s_2, R)),
((q_{12}, s_3) \to (q_{13}, s_3, L)),
((q_{12}, s_0) \to (q_{13}, s_0, L)),
((q_{13}, s_0) \rightarrow (q_{13}, s_0, L)),
((q_{13}, s_2) \rightarrow (q_{13}, s_2, L)),
((q_{13}, s_1) \to (q_{14}, s_2, L)),
((q_{14}, s_0) \to (q_{15}, s_0, R)),
((q_{14}, s_1) \to (q_{16}, s_1, L)),
((q_{15}, s_2) \rightarrow (q_{15}, s_1, R)),
((q_{15}, s_3) \rightarrow (q_{15}, s_3, R)),
```