

Consider the following Turing machine $M = (Q, \Sigma, \Gamma, \delta, q_0, q_{accept}, q_{reject})$.

$$Q = \{q_0, q_1, q_2, q_3, q_{accept}, q_{reject}\}$$

$$\Sigma = \{0, 1\}$$

$$\Gamma = \{0, 1, \times, \sqcup\}$$

δ is given by the following table

STATE	SYMBOL	STATE	SYMBOL	DIRECTION
q_0	0	q_2	\times	R
q_0	1	q_1	\times	R
q_0	\times	q_0	\times	R
q_0	\sqcup	q_{accept}	*	*
q_1	0	q_3	\times	L
q_1	1	q_1	1	R
q_1	\times	q_1	\times	R
q_1	\sqcup	q_{reject}	*	*
q_2	0	q_2	0	R
q_2	1	q_3	\times	L
q_2	\times	q_2	\times	R
q_2	\sqcup	q_{reject}	*	*
q_3	0	q_3	0	L
q_3	1	q_3	1	L
q_3	\times	q_3	\times	L
q_3	\sqcup	q_0	\sqcup	R

Write down the computation of M on inputs 0110 and 0010. Do this by filling out tables like the following one. Note that you must **underline** the symbol of

Step	State	Tape contents
0	q_0	<u>0</u> 110
1		
2		
3		
4		
...		

the tape which M is scanning after each step.