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(a)

Convert the following NFA into an equivalent DFA.
M has:

- states $Q = \{q_0, q_1\}$
- start state $q_0 \in Q$
- accept states $A = \{q_0, q_1\}$
- transition function δ:

Input State	Letter	Output State
q_0	0	q_0
q_0	$0, 1$	q_1
q_1	1	q_1

Let N be the DFA equal to M.
N has:

- states $P(Q) = \{\emptyset, \{q_0\}, \{q_1\}, \{q_0, q_1\}\}$
- start state $\{q_0\} \in P(Q)$
- accept states $A = \{\{q_0\}, \{q_1\}, \{q_0, q_1\}\}$
- transition function δ:

Input State	Letter	Output State
$\{q_0\}$	0	$\{q_0, q_1\}$
$\{q_0\}$	1	$\{q_1\}$
$\{q_1\}$	0	$\emptyset$
$\{q_1\}$	1	$\{q_1\}$
$\{q_0, q_1\}$	0	$\{q_0, q_1\}$
$\{q_0, q_1\}$	1	$\{q_1\}$
$\emptyset$	0	$\emptyset$
$\emptyset$	1	$\emptyset$