

$\epsilon \times n = 5$ (NFA $\rightarrow$ DFA) with ϵ -transition

Yes A is an NFA: $\delta(q_1, a) = \{q_1, q_2\}$

To Convert NFA to DFA we use ϵ -closure of the state rather than state

δ	a	b
q_0	q_1	/
q_1	$\{q_1, q_2\}$	/
q_2	/	q_2

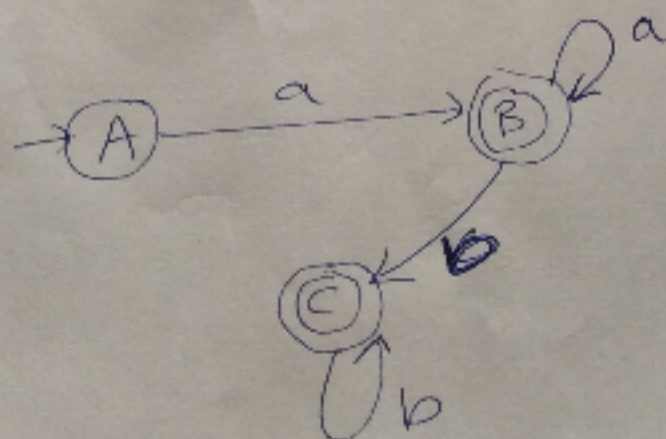
$$\epsilon\text{-closure}(q_0) = \{q_0, q_1\}$$

$$\epsilon\text{-closure}(q_1) = \{q_1\}$$

$$\epsilon\text{-closure}(q_2) = \{q_2\}$$

δ	a	b
$\rightarrow \{q_0, q_1\}$	$\epsilon(\{q_0, q_1\}) = \{q_0, q_1\}$	/
$\{q_1, q_2\}$	$\epsilon(\{q_1, q_2\})$	$\epsilon(\{q_2\}) = q_2$
q_2	/	$\epsilon(\{q_2\}) = q_2$

Now rename the states $\{q_0, q_1\} = A$, $\{q_1, q_2\} = B$, $\{q_2\} = C$



DFA