1. (7 pts) Consider the following Deterministic Finite Automaton.
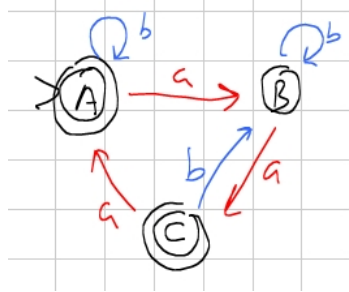
Use expression graphs to determine a regular expression for it's language.
Show all steps in the process.

2. (3 pts) Consider the language $L = \{w \in \{a, b\}^* \mid w = a^i b^j; i < j\}$. Use the Finite State Test (any valid version) to show that L is not regular.