

We can use JFLAP to explore Regular expression Identities by converting the Regular expression to a DFA and to demonstrate equivalence of two forms.

For a regular expression R, a partial list of identities follow.

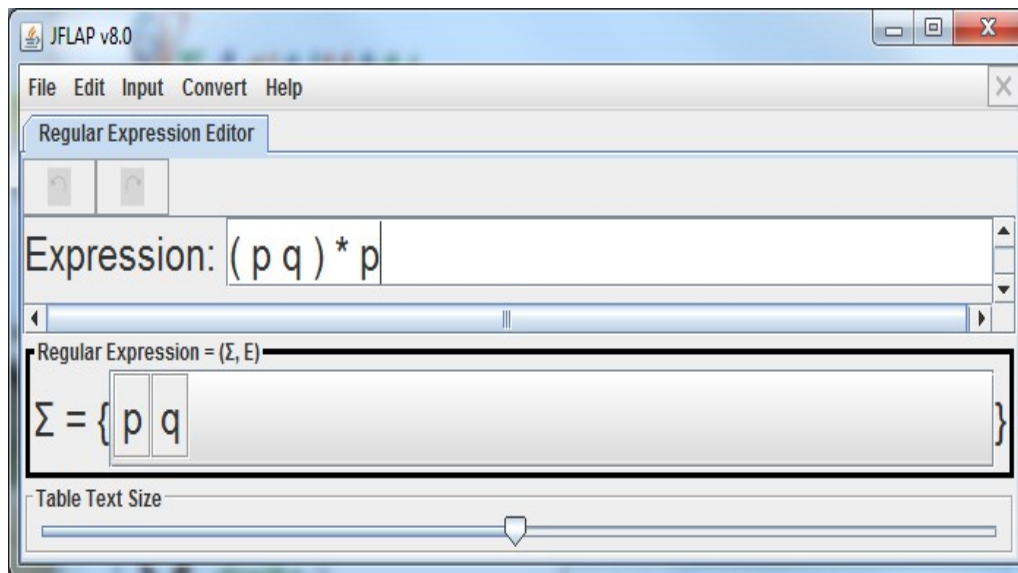
$$R^*R^* = R^*$$

$$(R^*)^* = R^*$$

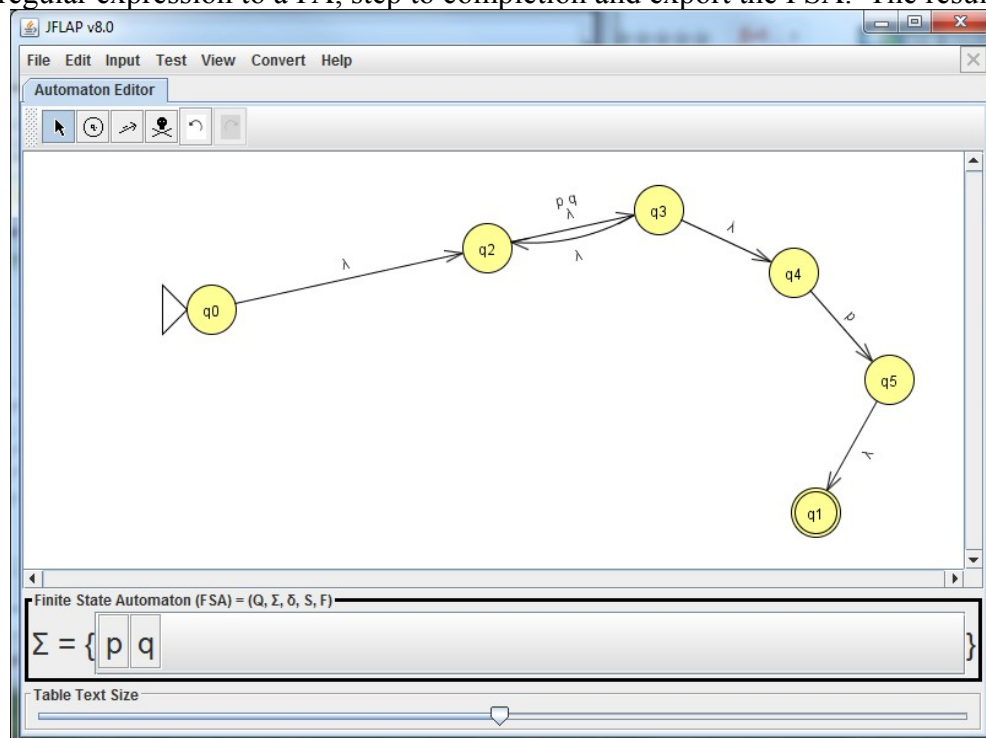
$$RR^*R^*R$$

$$(PQ)^*P = P(QP)^*$$

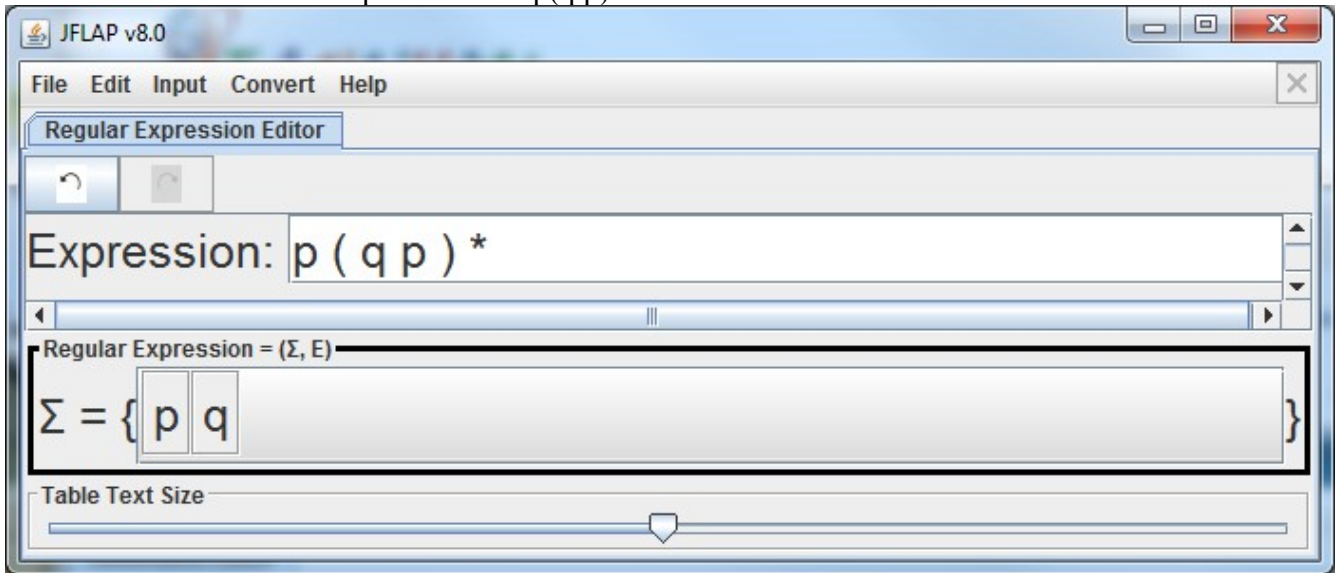
Consider the form $(PQ)^*P = P(QP)^*$, without loss of generality we use the terminals p and q



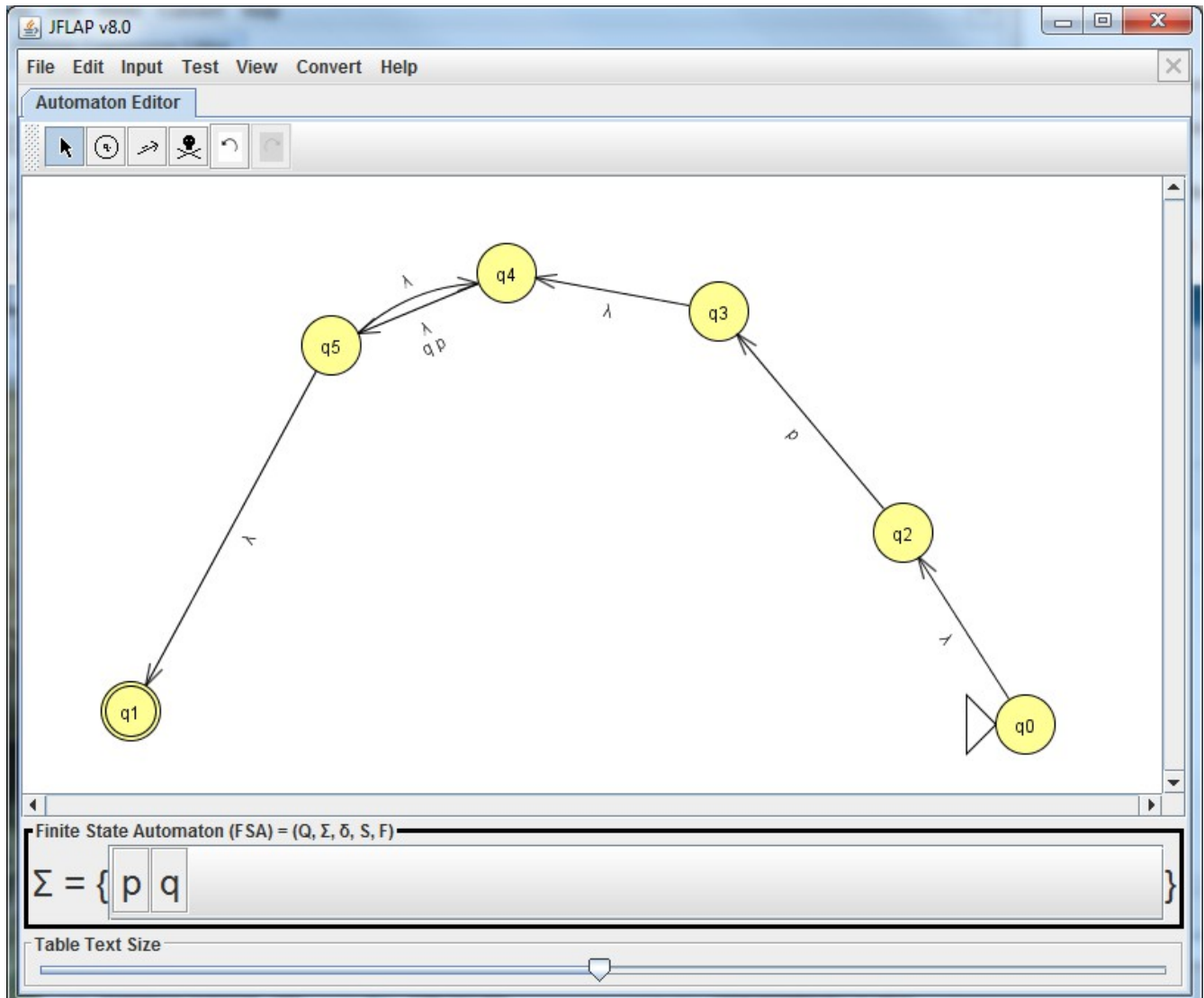
Convert the regular expression to a FA, step to completion and export the FSA. The result should be.



Next lets demonstrate the equivalence to $p(q p)^*$



Convert the regular expression to a FA, step to completion and export the FSA. The result should be.



Examine the states and the guards on the transitions, are the machines the same?