



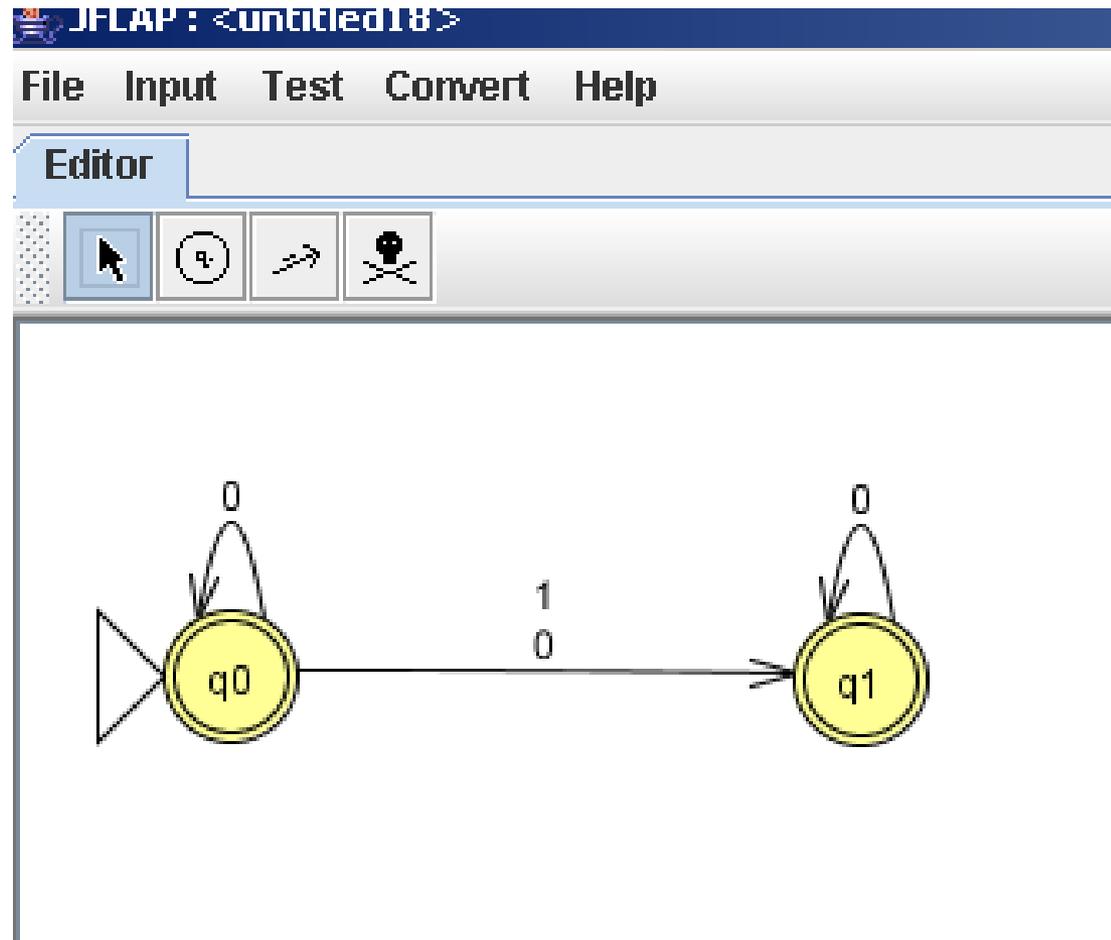
Expressões Regulares

Conversão de AF para ER no JFLAP

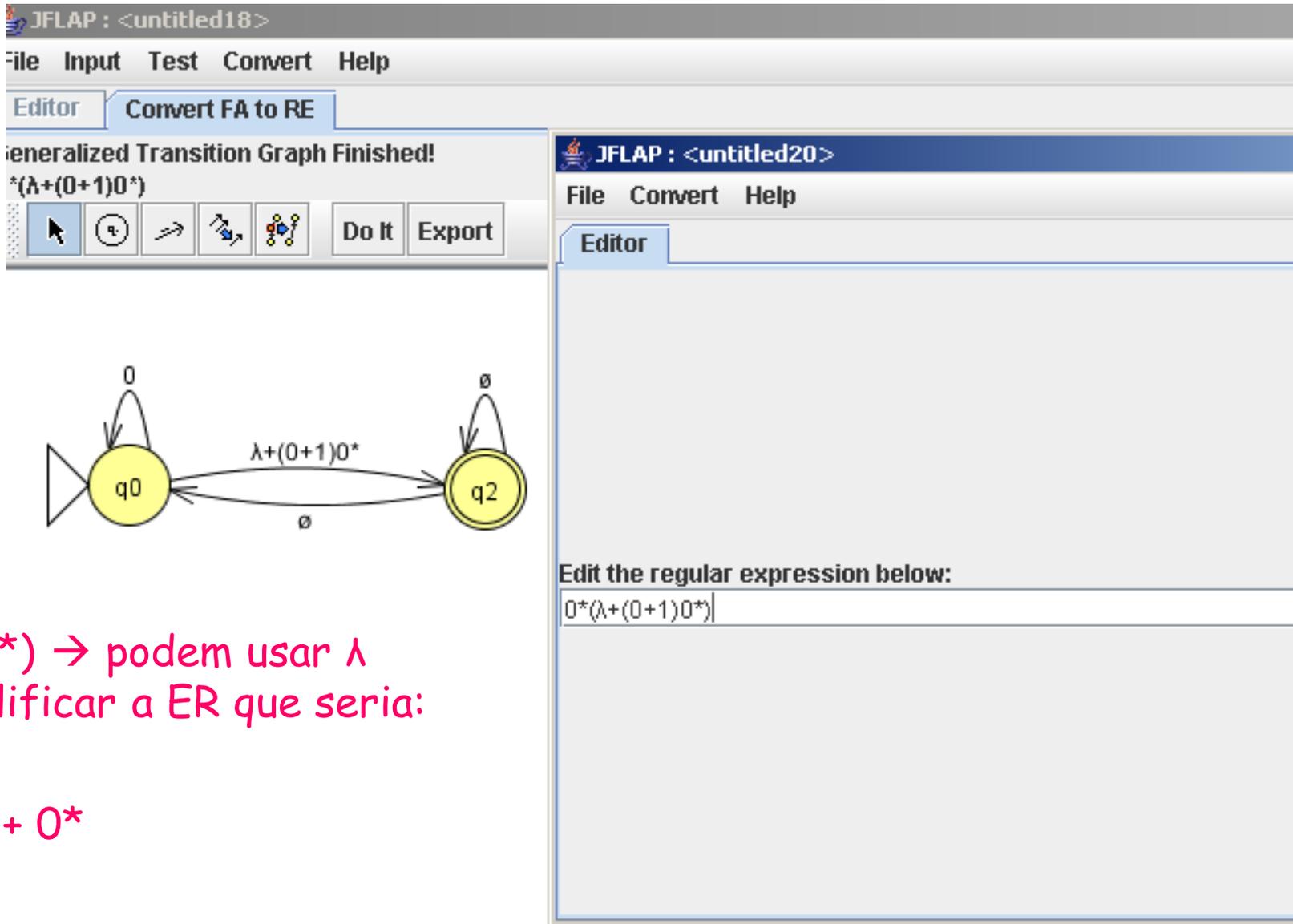
Equivalências entre AFD, AFND, AF- λ (AF com movimentos nulos), ER, GR

Conversão de AF para ER no JFLAP

- O conjunto de cadeias sobre $\{0,1\}$ que tenha no **máximo** um 1.



Conversão no JFLAP



The screenshot displays the JFLAP interface. The left window, titled "JFLAP : <untitled18>", shows a Finite Automaton (FA) with two states, q_0 and q_2 . q_0 is the start state, indicated by a double arrow. q_2 is the final state, indicated by a double circle. Transitions are: a self-loop on q_0 labeled 0 ; a transition from q_0 to q_2 labeled $\lambda+(0+1)0^*$; and a transition from q_2 to q_0 labeled \emptyset . A self-loop on q_2 is labeled \emptyset . The window title bar includes "File Input Test Convert Help" and a toolbar with icons for navigation and a "Do It Export" button. The text "Generalized Transition Graph Finished!" and the regular expression $0^*(\lambda+(0+1)0^*)$ are visible.

The right window, titled "JFLAP : <untitled20>", shows the "Editor" tab with the text "Edit the regular expression below:" and the input field containing $0^*(\lambda+(0+1)0^*)$. The window title bar includes "File Convert Help".

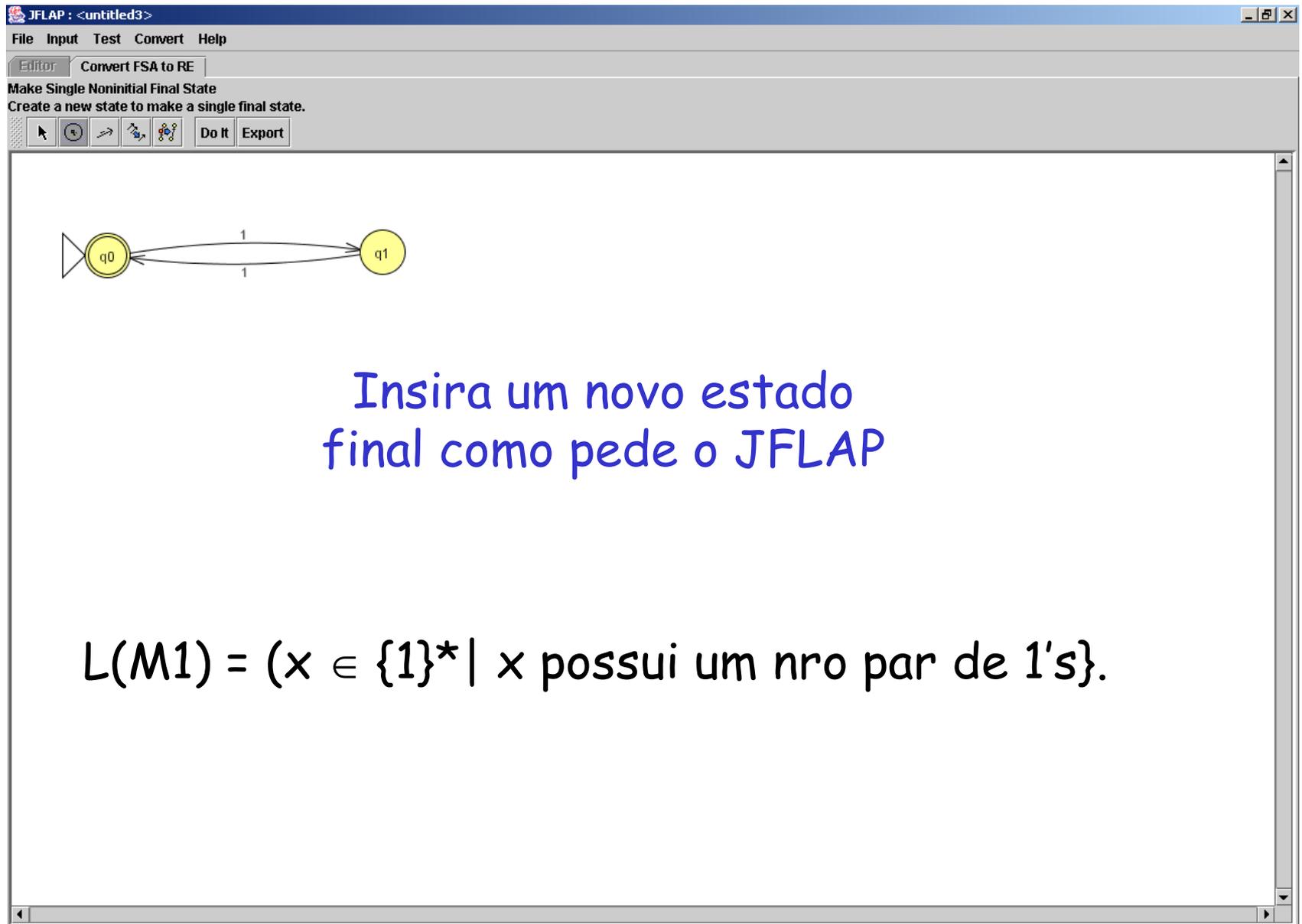
$0^*(\lambda+(0+1)0^*) \rightarrow$ podem usar λ
para simplificar a ER que seria:

$$0^* (1+0) 0^* + 0^*$$

Façam o AF para a seguinte linguagem

- $L(M1) = \{x \in \{1\}^* \mid x \text{ possui um nro par de 1's}\}.$

Conversão de AF para ER no JFLAP



Make Single Noninitial Final State
Create a new state to make a single final state.

Do It Export

Insira um novo estado final como pede o JFLAP

$L(M1) = \{x \in \{1\}^* \mid x \text{ possui um nro par de } 1\text{'s}\}.$

Make Single Noninitial Final State
Put lambda transitions from old final states to new.

Do It Export



Clique em
Do it!

Coloque transições nulas nos estados sem transição

JFLAP: <untitled3>

File Input Test Convert Help

Editor Convert FSA to RE

Reform Transitions
Put empty transitions between states with no transitions. 6 more empty transitions needed.

Do It Export

```
graph LR; q0((q0)) -- 1 --> q1((q1)); q1 -- 1 --> q0; q0 -- λ --> q2((q2)); style q0 stroke-width:4px; style q2 stroke-width:4px;
```

Clique em
Do it!

Windows taskbar: Iniciar, Journal of Educational T..., http://teia.inf.ufrgs.br/c..., aula8, JFLAP: <untitled3>, Microsoft PowerPoint - [...], 09:46

Completa as 6 transições faltantes

JFLAP : <untitled3>

File Input Test Convert Help

Editor Convert FSA to RE

Remove States
Use the collapse state tool to remove nonfinal, noninitial states. 1 more removals needed.

Do it Export

```
graph LR; q0((q0)) -- 0 --> q0; q0 -- 1 --> q1((q1)); q1 -- 1 --> q0; q0 -- 0 --> q2(((q2))); q1 -- 0 --> q2; q2 -- 0 --> q0; q1 -- 0 --> q1; q2 -- 0 --> q2; style q0 stroke-width:4px; style q2 stroke-width:4px;
```

Clique em
Do it!

Iniciador Journal of Educational T... http://teia.inf.ufrgs.br/c... aula8 JFLAP : <untitled3> Microsoft PowerPoint - [...]

09:48

Grafo terminado

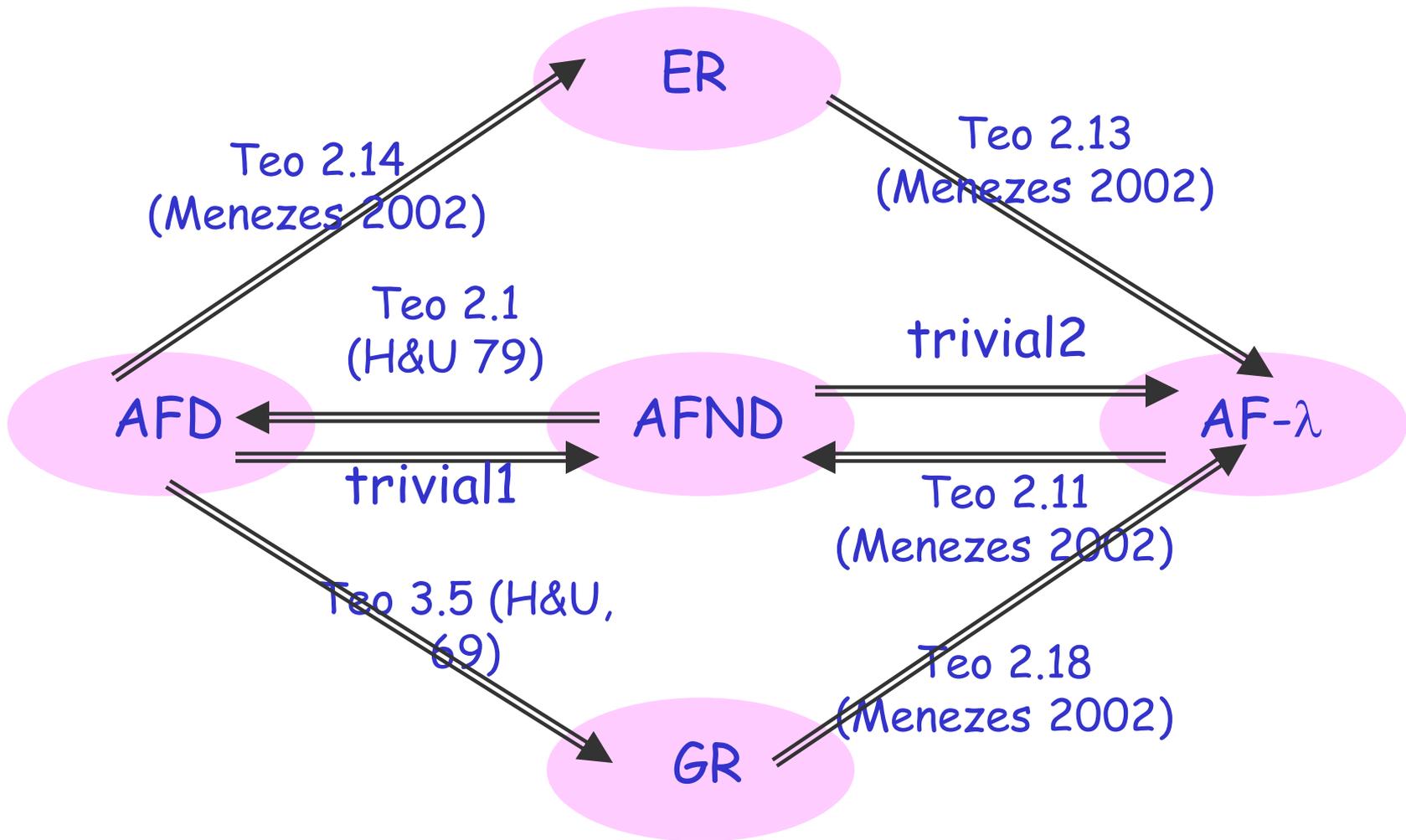
The image shows a screenshot of the JFLAP software interface. The main window, titled "JFLAP : <untitled3>", displays a transition graph with two states, q_0 and q_2 . State q_0 is the start state, indicated by a double circle. It has a self-loop labeled "11" and a transition to state q_2 labeled "1". State q_2 is an accepting state, indicated by a double circle, and has a self-loop labeled "0".

Below the graph, a smaller window titled "JFLAP : <untitled6>" is shown. It has a menu bar with "File", "Convert", and "Help". The "Editor" tab is active, and it contains the text "Edit the regular expression below:" followed by a text input field containing the regular expression $(11)^*$. A large black arrow points from the text input field down to the regular expression $(11)^*$ displayed below it.

The Windows taskbar at the bottom shows several open applications: "Iniciar", "Journal of Educational T...", "http://teia.inf.ufrgs.br/c...", "aula8", "JFLAP : <untitled3>", "JFLAP : <untitled6>", "Microsoft PowerPoint - [...]", and the system clock showing "09:51".

Equivalências entre AFD, AFND, AF- λ , ER, GR

Trivial2: decorre da definição



Trivial1: colocar { } nos estados