

$$\begin{aligned}
r_{3,3}^2 &= r_{3,2}^1 (r_{2,2}^1)^* r_{2,3}^1 + r_{3,3}^1 \\
&= (0 + 1)(\epsilon + 00)^*(1 + 01) + \epsilon \\
&= (0 + 1)((00)^*1 + (00)^*01) + \epsilon \\
&= (0 + 1)0^*1 + \epsilon
\end{aligned}$$