

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