

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