Chapter 3, Problem 5(c) Solution

$$
\begin{aligned}
\wp(\{X \le 12\} \cup \{Y \le 12\}) &= 1 - \wp(X > 12, Y > 12) \\
&= 1 - \wp(X > 12)\,\wp(Y > 12), \quad \text{by } \perp\!\!\!\perp, \\
&= 1 - e^{-12\lambda}\, e^{-12\mu} \\
&= 1 - e^{-12(\lambda+\mu)}.
\end{aligned}
$$