

Solution for exercise 5.3.7 in Karlin and Pinsky

$$\begin{aligned} P(W_{n+1} > 1) &> 0.98 \\ \Leftrightarrow 1 - P(W_{n+1} \leq 1) &> 0.98 \\ \Leftrightarrow P(W_{n+1} \leq 1) &< 0.02 \\ \Leftrightarrow 1 - \sum_{k=0}^n \frac{2^k}{k!} e^{-2} &< 0.02 \\ \Leftrightarrow \sum_{k=0}^n \frac{2^k}{k!} e^{-2} &> 0.98 \\ &\Leftrightarrow n \geq 5 \end{aligned}$$

→ we need 5 spare parts!