IMM - DTU

Solution for exercise 5.4.7 in Karlin and Pinsky

The W_i are iid, so we know from chapter 2, equation 2.30

$$
\begin{aligned}
E[\sum_{i=0}^{X(t)} f(W_i)] &= E[X(t)]E[f(W_1)] \\
&= \lambda t E[f(W_1)] \\
&= \lambda \int_0^t f(w)dw
\end{aligned}
$$