From (3.96) we know

\[ E[X_{n+1}] = \mu \cdot E[X_n] \]
\[ = \mu^{n+1} \]

Therefore we can calculate

\[ Z = \sum_{n=0}^{x} X_n \]
\[ = \sum_{n=0}^{\infty} X_n \text{ assume } X_n = 0 \forall n > x \]

\[ \rightarrow E[Z] = \sum_{n=0}^{\infty} E[X_n] \]
\[ = \sum_{n=0}^{\infty} \mu^n \]
\[ = \frac{1}{1 - \mu} \]