Exercise for section 4.2

Let $\left\{a\_{n}\right\}$ be a sequence defined by $a\_{1}=1, a\_{2}=2, and $

$ a\_{n}=2a\_{n}+a\_{n-1} $for all $n\geq 2$. Show that $a\_{n}\leq (5/2)^{n}$.