1. Consider a Bachelier model $X$ with time horizon $T$, let $(\mathcal{F}_t)_{t \in T}$ be the filtration generated by $X$ and assume that $G$ is a bounded, $\mathcal{F}_T$-measurable derivative. Show that there exists a (unique) pair $(a, H)$, $a \in \mathbb{R}, H \in H_2(0, T)$ such that $G = a + (H \cdot X)_T$.

2. Calculate the price of a European call option in the Bachelier model and show that the hedging strategy $H$ is bounded and non-negative.