Se asume siempre que estamos trabajando en un espacio de probabilidad $(\Omega, \mathcal{A}, P)$. We also assume that the notation makes sense, so for instance, if we are talking about a martingale, there is a filtration, etc.. Due on Wednesday 3/10/2018.

1) Use the Radon-Nikodym Theorem to prove the existence of the conditional expectation $E(f|\mathcal{B})$, for $f \in L^1$.

2) Prove that if $f \in L^1$, then $\{E(f|\mathcal{A}_n)\}_{n\geq 0}$ is U.I.. You may use standard measure theoretic results without proof. You may, or may not, use Chebyshev-Markov.