Q6: Let $\delta > 0$. Cover each $x \in M$ with $U_x = M_{\frac{\delta}{2}}(x)$ By compactness, there exists some finite $U_{x_1}, \dots U_{x_k}$ which cover M. By density of A, for each U_{x_i} there is some $a_i \in A$ such that $a_i \in U_{x_i}$. Therefore, if we take any $x \in M$, it will belong to some U_{x_i} and therefore we have that

$$d(a_i, x) \leq d(x_i, x) + d(x_i, a_i) \leq \frac{\delta}{2} + \frac{\delta}{2} = \delta$$

. As desired