CSE 21, Sample Quiz 1, Spring 1997

1. Prove $A \times (B \cap C) = (A \times B) \cap (A \times C)$
2. Let $A = \{\{a, b\}, c, \{d, e\}\}$
   - (a) Find the Power Set $\mathcal{P}\ (A)$
   - (b) Find the Partition Set $\Pi(A)$
3. (a) Let $\mathcal{M} = \{D, D^c\}$
   Is $\mathcal{M}$ an algebra of the subsets of $\mathcal{U}$? Justify your answer.
   - (b) Let $\mathcal{A}$ and $\mathcal{B}$ be algebras of subsets of $\mathcal{U}$.
     Is the union $(\mathcal{A} \cup \mathcal{B})$ also an algebra of subsets of $\mathcal{U}$? Justify your answer.