This miniproject asks you to work with the concept of partitions and refinements of partitions. A refinement of a partition is defined just prior to #49 of Section 8.5.

(a) Do #49 of Section 8.5.

(b) Consider a relation on the set $\{a, b, c, d\}$. Is there a relation whose partition does not have a further refinement? If so, give an example. If not, explain why not.

(c) List all of the partitions of $\{a\}$.

(d) List all of the partitions of $\{a, b\}$.

(e) List all of the partitions of $\{a, b, c\}$.

(f) List all of the partitions of $\{a, b, c, d\}$.