

Recitation 9

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- Given the Poset: $(\{\{1\}, \{2\}, \{4\}, \{1, 2\}, \{1, 4\}, \{2, 4\}, \{3, 4\}, \{1, 3, 4\}, \{2, 3, 4\}\}, \subseteq)$
 1. Find the maximal elements: $\{1, 2\}, \{1, 3, 4\}, \{2, 3, 4\}$ (because these are not subsets of any other sets in the relation right?)
 2. Find the minimal elements: $\{1\}, \{2\}, \{4\}$ (again, there are no subsets of these sets in the relation)
 3. Is there a maximum (i.e., greatest) element?: No. It does not exist.
 4. Is there a minimum (i.e., least) element?: No. It does not exist.
 5. Find the set of all upper bounds of $\{\{2\}, \{4\}\}$: $\{\{2, 4\}, \{2, 3, 4\}\}$
 6. Find the least upper bound (lub) of $\{\{2\}, \{4\}\}$: the element $\{2, 4\}$
 7. Find the set of all lower bounds of $\{\{1, 3, 4\}, \{2, 3, 4\}\}$: $\{\{3, 4\}, \{4\}\}$
 8. Find the greatest lower bound (glb) of $\{\{1, 3, 4\}, \{2, 3, 4\}\}$: the element $\{3, 4\}$