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 $\{3,4\}$