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\}