MATH 108 - FALL 2002

HOMEWORK 6, DUE THURSDAY NOVEMBER 21

(1) Draw a picture of the poset of all subsets of $\{1, 2, 3, 4\}$ where $\leq$ is inclusion (so $A \leq B$ if $A \subseteq B$). (It should looks like the hypercube!)

(2) Draw a picture of the poset of all "faces" of the cube, where $\leq$ is inclusion. Here a "face" includes the vertices, edges, and what you are used to calling faces (this is standard notation for higher dimensions).

(3) Give a formula for the number of labelled trees on n vertices with $n-3$ leaves. (Hint: Prüfer codes and inclusion-exclusion).

(4) 6A

(5) 10A

(6) 10B